

The 2001 Kista Blackout:  
Corporate Crisis and  
Urban Contingency

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# 1. Introduction

Early in the morning of March 11, 2001, power cables caught fire in a tunnel adjacent to a power station in Akalla, a northwest suburb of the City of Stockholm, Sweden's capital. The consequences were dramatic for the residents, the Power Company involved, Birka Energi, and leading city actors. The fire caused a power outage that affected eight districts in Stockholm's northwestern suburbs. These districts were left partially or totally without power from 7:00 a.m. to 8:35 p.m. the following evening.<sup>1</sup> Hardest hit was the adjacent district of Kista, which was left totally without power following the tunnel fire. In the study that follows, this infrastructural crisis is therefore referred to as the "Kista blackout."

The Stockholm Fire Department was assigned to put out the fire, which was located 330 meters inside a cable tunnel (Hornyak, 2001:11). Never before in the history of Swedish rescue service were firefighters sent so deep into a tunnel to extinguish a fire (Svensson, 2001). The blackout seriously affected businesses and public administration as well as the daily lives of residents as 19,000 Birka clients—some 50,000 people and 700 businesses employing upwards of 30,000 people—lost power (Birka Bildserie, 2001).<sup>2</sup> This blackout was one of the most comprehensive power outages ever to strike Sweden and one of largest power disturbances ever witnessed in the history of electricity distribution in Stockholm (Karlsson, 2001c). Both the duration of the blackout and its scope are without modern precedent (Aktuellt, March 12, 2001).

Prolonged blackouts have serious repercussions, and this one was no exception. The total cost of the Kista blackout is estimated at 12.8 million EUR (Karlsson, 2001b). Heating, ventilation, fresh water pumps, sewage pumps and telephones were rendered partially or completely useless during the blackout, as were cellular phone networks at various points (Stockholms Brandförsvar, henceforth referred to as SBF, 2001:32). This made it impossible to cook meals or access the radio, TV or the Internet. In addition, elevators stopped, leaving people trapped between floors. Conditions were especially

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<sup>1</sup> The districts of Kista, Akalla, Husby, Rinkeby, Hägerstalund, Bromsten, Spånga and Vällingby were affected.

<sup>2</sup> These figures constitute five percent of Birka's customers in Stockholm and approximately five percent of its electricity capacity in the region (SvD, March 12, 2001).

harsh for the elderly, since electronic aid devices failed to function. Moreover, subways were unable to run and traffic lights were out of order, which forced police to direct traffic manually (Thunberg, 2001). All computers, locking devices and security systems also failed during the power outage (SBF, 2001:5). The four national Swedish daily newspapers, all located in the greater Stockholm area, were similarly affected. In general, basic societal priorities—what Newlove, Stern, and Svedin have called the “the four P’s” of public health, public order, public safety and prosperity—were at stake during the Kista blackout (2000:3). As it turned out, public order, public safety and prosperity were particularly threatened during the blackout.

CRISMART’s case studies have often focused on severe societal disasters, for example, the 1998 ice storm in Canada (Newlove, 2000) or the Chernobyl fallout crisis of 1986 (Stern, 2001) as well as crises that have affected large numbers of people and left collective and individual trauma in their wake (see Hansén and Stern, 2001; Ramberg, 2001). Although these disasters are diverse in nature, it becomes clear after in-depth analysis that they share a number of things in common. Crises present authorities and stakeholders with similar challenges to decision-making and communication. Decision-makers view the situation as urgent, a threat to core values and full of uncertainty (Stern and Sundelius, 2002). Considering the gravity of the incidents studied in prior CRISMART case studies and the fact that no one was seriously injured during the Kista blackout, the reader might ask what this case brings to the crisis management table. The case of the Kista blackout is interesting for a number of reasons. For one thing, it demonstrates the vulnerability of technical infrastructure, a vulnerability that is now viewed as one of the most critical threats facing today’s societies. What happened in March 2001 in Kista is an important reminder of modern society’s extreme dependence upon increasingly complex and mutually supporting technical systems such as the power supply, telecommunications and IT as well as how the reliability of these systems is vital to the functioning of our society (see SOU 2001:41; Skr. 2000/01:52). The Kista blackout is also well worth studying in more detail because of the context in which the events took place. Against the backdrop of electricity reform that has been debated following the deregulation of the Swedish market in 1996, the Kista power outage struck an emerging, high-tech entrepreneurial village also facing the challenge of building an integrated so-



ciety of citizens from an array of distinct ethnic communities. In addition, this report looks more closely at the local district level, a level that is frequently disregarded in studies of major crises. During the particular blackout in question, however, national and even municipal politicians remained in the background and left management of the crisis and the decision-making process to local and sub-local actors. Finally, the study of the Kista blackout that follows assumes a comparative perspective not often found in studies of this nature. In the past couple of years, CRISMART researchers have examined a number of infrastructural crisis cases, including the power outages that plagued eastern Canada and one of its main urban centers, Montreal, following the 1998 ice storm (Newlove, 2000),<sup>3</sup> the blackout that struck Auckland, one of the major cities in New Zealand, that same year (Newlove et al, 2000),<sup>4</sup> and the power outage suffered in February 1999 by Buenos Aires, the Argentinean capital (Ullberg, 2001).<sup>5</sup> The Kista case offers useful learning experiences, particularly when placed in a broader perspective and analyzed in relationship to the above-mentioned cases.

### *1.1. Aim of the study*

This study aims to describe and analyze the management of the infrastructural crisis that, for the purposes of this study, has been called the Kista blackout. The study is part of a series of case studies by the National Center for Crisis Management Research and Training (CRISMART) and shares the Center's larger goal: to produce new knowledge on the complexity of crisis management and to create better conditions for emergency planning.

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<sup>3</sup> The ice storm in eastern Canada led to a serious disruption of the power supply in a crisis that lasted from January 1 to February 14, 1998. Falling temperatures and strong winds followed 48 hours of freezing rain, extreme weather with which eastern Canada's vulnerable power supply system was unable to cope. 5.5 million people suffered from the power outages, and those worst affected were without power for over a month. The crisis affected Quebec, including the major city of Montreal, as well as Ontario and New Brunswick (Newlove, 2000).

<sup>4</sup> In Auckland in 1998, four 110 kV cables failed within a short time of each other. The blackout affected Auckland's central business district between February 20 and mid-April, 1998 (summertime in New Zealand). 4,000 residents and 10,000 companies were affected (Newlove et al, 2000).

<sup>5</sup> The Buenos Aires blackout lasted for 11 days in a mainly residential area and affected some 626,000 people the first day (Ullberg, 2001).

## *1.2. Plan of the study*

A section on method and sources (section two) follows these introductory paragraphs. The third section presents the analytical framework for studying crises and ends with a discussion of which actors were affected by this case. Section four examines in some detail the context in which the case took place. Here the political, geographical, economical and infrastructural environment is described for the purposes of further analysis. The concluding part of section four outlines the central actors and previous blackout experiences in Stockholm. Section five presents a detailed chronology of events. In section six, the case is divided up into decision occasions focusing on situations in which stakeholders are confronted with a problem requiring action or inaction. Seven such decision occasions are subsequently studied. In the following section (section seven), eight analytical themes developed in previous crisis management research are applied to the case: emergency preparedness and crisis mitigation, problem perception and framing, leadership, decision units and crisis organization, bureaucratic cooperation and conflict, value conflict, cultural diversity, and crisis communication and learning. The study ends with with a number of concluding remarks (section eight), in which findings and conclusions from the case are formulated in terms of a series of prescriptions for good and legitimate crisis management.

## 2. Method

This report uses the three-step approach to process tracing and comparative analysis of crisis management that combines political psychology and organizational theory (Sundelius, Stern & Bynander, 1997; Stern, 2001; Stern & Sundelius, 2002). First, since the crisis takes place in a specific context that enables and constrains the crisis managers, the case is placed in its historical, institutional and political context. Second, a time frame is established entailing the temporal parameters that delimit the crisis. A detailed reconstruction of the crisis is also presented. Finally, the case is dissected and analyzed.

Case dissection entails three major steps. First, decision occasions are identified. The concept of decision occasions in this context are moments when decision-makers confront circumstances or face a problem that forces them to choose between action and inaction. In a nutshell, a decision occasion is when decision-makers ask themselves the question: What do we do now? (Sundelius et al, 1997). At this stage of the study, focus is placed on the impetus behind the crisis, i.e. the stimulus that triggers an action or non-action from the crisis management actors. An impetus generates a crisis management response that, in turn, generates a new impetus (Stern, 2001:50ff.). The way the crisis managers respond to each impetus decides, to a great extent, if the crisis escalates or de-escalates. Some criteria should be applied when selecting decision occasions. Among other things, the sheer importance of the problem in the crisis decision-making process is essential. It is necessary that the problem was of concern to the decision-makers and took up much of their attention. Second, we have the post hoc importance. These problems may well have given the impression of being secondary at the time but, in retrospect, they appear to have affected the process. Decision occasions could also have pedagogical value. They could show solutions or provide hints, which might provide guidance in future crises and different circumstances (Stern & Sundelius, 2002).

The second step in the dissection of a case is to scrutinize the case with the aid of analytical themes. The third step is to compare the case with other cases from the CRISMART case bank as well as the literature on international crisis management (Stern, 2001:59; Stern & Sundelius, 2002).

## 2.1. Sources

This study is based primarily on media sources, commissioned reports and internal evaluation reports by various actors. Media sources used included national and local newspaper articles, reports from televised news programs as well as the Internet. Interviews were also conducted with stakeholders and decision-makers and have been essential to this study, since they provide first-hand information from crisis management actors.<sup>6</sup> Notwithstanding the merits of the interview, there are also evident shortcomings in terms of reliability. For example, the role of time cannot be overlooked. When the bulk of the interviews took place, some six months had passed since those stress-filled days in March 2001. This means that memory distortion cannot be excluded. It should, moreover, be noted that individual crisis actors seldom have a comprehensive grasp of the course of events. They may have a lot of information concerning the crisis management that they were part of, but, given the complexity of a crisis, statements on synchronous events might be based on flawed information. It is common that the interviewee provides answers that place the interviewee in a favorable light. They may even go so far as to phrase responses in a way that suggests that other crisis actors are to blame. The interviewee may also display a selective loss of memory about situations that the interviewee finds distressing. Lastly, actors involved in a crisis may have difficulty separating first-hand information from second-hand information such that the influence of media information and other sources on the interviewee's replies cannot be wholly excluded (Sundelius et al, 1997:46).

Among the ample written sources used in this study, some require an explanatory paragraph. A central piece in this study is the Stockholm Fire Department's evaluation report on the blackout entitled, "Allvarliga störningar i nordvästra Stockholm" [Serious outages in Northwest Stockholm], commissioned by the City Manager.<sup>7</sup> The report is based on answers to a questionnaire that the Fire Department distributed to 14 municipal administrations, companies and utilities involved in crisis management. In the initial stage of the evaluation

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<sup>6</sup> The bulk of the interviews took place in Stockholm between September 27 and October 29, 2001. Additional interviews were conducted on December 13, 2001, January 7 and February 20, 2002. Appendix 1 shows a list of the interviewees. All interviews were conducted in Swedish, and the author has translated the data.

<sup>7</sup> Referred to as SBF, 2001 in the study.

project, contacts were initiated between the Fire Department's rapporteur, Göran Andersson, and experts within the fields of infrastructural vulnerability and crisis management. CRISMART formulated some ten questions that were included in the dispatch as an appendix. As part of the evaluation process, the Fire Department also held a conference on the topic of the blackout on November 29, 2001 where involved city actors recounted their interpretations of the events. This symposium, the Fire Department's report, and a number of unprocessed answers to the questionnaires have been a great help in writing this report.



## 3. Analytic Framework

### 3.1. *What constitutes a crisis?*

Crisis is obviously the fundamental concept of this study. It is imperative that crisis is defined in order to establish for which actors the case in question constituted a crisis. Following the broad definition of Sundelius et al (1997:13), a crisis is characterized by three components that challenge crisis decision-making and communication. A crisis occurs when central actors perceive the situation as threatening to core values while limited time is at hand and circumstances are characterized by uncertainty. Thus, the essence of the conception of crisis in this definition lies in the perception of its managers. Organizations and decision-makers differ in the way they respond to these challenges, which in turn leads to diverging ways of dealing with stress and coping with crises among crisis managers.

#### 3.1.1. FOR WHICH ACTORS WAS THE KISTA BLACKOUT A CRISIS?

So how well does the case of Kista fit into the above definition of crisis? In what follows I will argue that this conception of crisis does apply to the Kista blackout. The events of the blackout constituted a crisis primarily for Birka Energi—the power provider for the area. Birka's credibility and reliability were threatened and thereby its reputation among its clients. The power company's credibility was more at stake than that of other actors. The accident took place in Birka's facilities and affected its customers. The contingency had occurred, and it was up to Birka's managers to make sure that damage was kept to a minimum. Birka's credibility with customers, whether or not they were actually affected by the blackout, depended on how Birka managed the crisis. For Birka, circumstances were characterized by uncertainty as well as by urgency. The extent of the cable damage was in the air during the initial stages of the crisis. Since a blackout that exceeds a couple of hours is seen as extraordinary, Birka personnel on the strategic and the operational level worked against the clock throughout the contingency (Karlsson, 2001b; 2001e).

The other major actor in the case of Kista was the Stockholm Fire department. The nature of any fire department's mission means that

urgency, uncertainty and to some extent even threats to values are integral parts of the profession. One might question if these three crisis criteria are applicable to operational emergency actors since these actors are used to working under crisis conditions. Hence, the crisis definition might seem an odd label to place on an organization such as the fire department. Notwithstanding the legitimacy of this argument, the case of Kista caused a situation that was out of the ordinary even for the Stockholm Fire Department. To begin with, the fire extinction operation was a unique occurrence in the history of Swedish rescue service. With limited information about the events at its disposal, the Fire Department had to put out the fire. The uncertainty aspect can be seen in the fact that it took quite some time before it was established what was actually burning and where the fire was located (Svensson, 2001). Given the nature of the fire department's work and how fire fighters supposedly respond to threatened values, uncertainty and time pressure, it is hardly fruitful to characterize the fire extinction episode as a crisis for the fire department. Rather it was a serious incident. After the operational phase, however, the Stockholm Fire Department was yet again put to the test. Now it had to activate its new coordinating management role. Indeed, the Fire Department's credibility as the City's coordinator during crisis depended on the outcome of this precedent-setting case. With limited time and uncertainty still at hand, the coordinating part of the blackout may have constituted more of a crisis for the Fire Department than the actual fire, not least because the role of coordinator was a new one for the organization.

In terms of the local actors, certain values were threatened. For the residents, not least the elderly, public safety and security were under threat as every small detail of daily life turned into insurmountable obstacles. For small business owners, security and prosperity were at stake as the more than 30-hour standstill meant a considerable loss of income (Tornérhielm, 2001b). The district administrations (DA's) were, without greater municipal assistance, left to cope with a contingency for which they had no precedent. This was especially difficult for Kista DA, since Kista was the only district that lacked power altogether. For all of these local actors, circumstances were characterized by uncertainty as they struggled to obtain information about events (Abascal, 2001) and to deal with increasing tensions as time passed and electricity was not restored.



## 4. Context and Actors

The section below outlines the political, historical, institutional and economical context of the Kista blackout. This is followed by a section in which the perspective is shifted from the general to the more specific, concentrating on Birka's network system and the Akalla tunnel, the site of the cause of the blackout.

### *4.1. Administration of the City of Stockholm*

Stockholm is Sweden's biggest city with more than 750,000 inhabitants. The Municipal Council and the Municipal Board oversee central political management. The Municipal Council's 101 elected representatives constitute the City's formal decision-making body.<sup>8</sup> The Council can be characterized as a municipal parliament and the Municipal Board as its government. The Board comments on Council decisions and has overall responsibility for implementation. The Board has 13 members who represent the parties that have seats in the Council. The City Executive Office's task is to assist the Municipal Board in its management and coordination of municipal administration by being its implementing, arranging and administrating body ([www.stockholm.se](http://www.stockholm.se)).

Every fourth year the Municipal Council elects eight City Commissioners designated to govern a policy area. The eight commissioners and four additional commissioners of the opposition make up the City Commissioner's Committee. The Commissioner of finance, who also chairs the Municipal Board, leads the work. Since the 1998 elections, the center-right coalition in power has implemented a privatization reform and 20 percent of traditional municipal activities have been privatized (Tottmar, 2000).

The next level in the municipal hierarchy consists of the City's civil service organization, which encompasses 18 district administrations, 18 specialist administrations and 17 municipal companies. The

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<sup>8</sup> After the 1998 local election, the majority in Stockholm City Hall was constituted by a four-party, center-right coalition; the Moderate Party (35 delegates), the Liberal Party (9), the Christian Democrats (6), the Stockholm Party (3). The remaining delegates made up for the opposition; the Social Democratic Party (29), the Left Party (13) and the Green Party (6) ([www.stockholm.se](http://www.stockholm.se)).

geographically divided district administrations are responsible for the lion's share of municipal services ([www.stockholm.se](http://www.stockholm.se)).<sup>9</sup>

#### 4.2. *Affected city districts*

The stricken city districts constitute a setting characterized both by businesses and by residents of a multi-cultural and socially relatively deprived environment. Dubbed "Sweden's Silicon Valley," it is an area often referred to as the hub of Sweden's high-tech industry.

In the 1960s, a severe housing shortage in Stockholm led the Swedish Government to initiate a program that commissioned the building of a million new apartments in ten years. The construction of Tensta began in 1966, and a year later, Rinkeby began to take form. In 1975, the new subway line was inaugurated ([www.spangatensta.stockholm.se](http://www.spangatensta.stockholm.se)). In the mid 1970s, the districts of Husby, Akalla and Kista were also established. Construction ended with the establishment Kista, which was completed in 1977 ([www.stockholm.se](http://www.stockholm.se)).

The districts affected by the blackout are largely composed of inhabitants with different ethnic backgrounds.<sup>10</sup> In 1999, the ten most common countries of origin were Iraq, Finland, Somalia, Turkey, Syria, Iran, Greece, Ethiopia, Chile and Lebanon ([www.spangatensta.stockholm.se](http://www.spangatensta.stockholm.se)). Today, there are 29,000 people living in Akalla, Kista and Husby, and of these, 14,000 or 47 percent of the residents derive their origin from foreign countries. The numbers for Rinkeby are 11,000 out of 16,000 people (71%) and 14,000 of 34,000 (41%) for Spånga-Tensta. In general, 20 percent of the inhabitants in Stockholm hail from countries other than Sweden (USK, 2000).

In terms of sheer kilometers, the distance between Tensta/Rinkeby and Kista is not far. However, the districts are worlds apart. Tensta/Rinkeby is socially neglected with a high rate of unemployment (Axelsson, 2001). The average income for a Rinkeby resident is only 53 percent of that of the general Stockholm citizen.<sup>11</sup> In Kista, on the other hand, a firm belief in the future has become manifest (*ibid.*). Many corporations have chosen Kista as center of operations, including Ericsson (11,500 employees), IBM (2,000 employees), Nokia

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<sup>9</sup> The district administrations are described in some detail in section 4.6.3.

<sup>10</sup> In the city of Stockholm's statistics, foreign citizens born in Sweden or in other countries and Swedish citizens born abroad are counted as people with different ethnic backgrounds.

<sup>11</sup> For Akalla, Kista and Husby, it is 82 percent and for Spånga-Tensta 90 percent (USK, figures from 1998).

(300 employees), and Tele2/Comviq (600 employees). All in all, there are 35,000 employees working for 700 businesses, all within a couple of hundred square meters of each other (Kärroman, 2001; Björling & Nilsson, 2001b).

### *4.3. Electricity reform*

The Swedish State no longer has a monopoly on electricity services. Since the 1996 electricity reform, the Swedish electricity market is deregulated and competitive in terms of electricity production and retail. On November 1, 1999, customers were also allowed to choose their supplier without obstacles. Transfer of power by grids is still controlled and supervised. The Swedish National Energy Administration has had this mandate since it was launched in 1998 (SOU 2001:73:05).

Deregulation of the Swedish electricity market is part of a global trend that involves critical infrastructural systems in many countries. Worries have been raised that this has negative effects on system maintenance security and emergency planning (SOU 2001:41). A current trend is that systems that used to be owned by public authorities are becoming privatized and corporatized (Ds 2001:14:113). Closely related to this is the fact that the structure of ownership among Swedish power supply actors is becoming increasingly international. In addition the Swedish power system is to a great extent integrated with the systems in the Nordic countries (SOU 2001:41:174). So, systems that recently were national and state owned are becoming parts of international and private corporations.<sup>12</sup>

The Swedish Commission on Vulnerability and Security has stated worries about reports that maintenance of the power system has worsened following deregulation. In addition, it declared that the extraordinary high number of blackouts in recent years has encouraged people to question if power supply security is sufficient (ibid.). According to the Commission, the Electricity Emergency Law should be

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<sup>12</sup> As stated above, corporate conversion, internationalization and privatization of the energy sector is an ongoing global trend. The trend, in turn, was a central issue in the case of the power outage in Auckland and the Buenos Aires blackout. In Auckland, the power company, Mercury Energy had undergone a privatization process six years prior to the blackout. At the time of the blackout, however, 75 percent of the shares were held by a trust and only 25 percent had, with restrictions, been offered to the public (Newlove et al, 2000:48f. In Buenos Aires, the fact that the power company was managed from Chile became a symbolic motivation for public protest during the outage (Ullberg, 2001:45).

amended so that it covers maintenance companies that look after the national grid and regional networks. Then authorities would be able to assure a higher rate of system security (ibid:175).<sup>13</sup>

Supervision of the Swedish power system is complex. The Ministry of Industry, Employment and Communications is responsible for establishing guidelines concerning the energy field and the national power supply system, and the Swedish National Energy Administration is responsible for their implementation. The Swedish National Electrical Safety Board is the supervising authority that maintains Sweden's electrical safety. The Swedish National Grid Company (the state-owned Svenska kraftnät), in turn, has overall responsibility for the coordination and collaboration of power systems (ibid:293). The Swedish National Grid Company also administers short-term electricity balance<sup>14</sup> and the general supervision and safety of the power system (Näringsdepartementet, 2001).

Another heated discussion of late concerns increasing electricity prices. Prices on the Nordic electricity exchange Nord Pool have almost doubled since the summer of 2000. On September 6, 2001, the Swedish government therefore commissioned Kjell Jansson, director general of the Swedish Customs Service and former executive president of the Swedish National Grid Company, to conduct a swift review of the electricity market. This one-man investigation concluded that pricing and competition worked fairly well, despite the trend towards fewer electricity-producing and trading actors. The Commission nevertheless suggested that the Swedish National Energy Administration be assigned the task of following electricity market developments and presenting the government with an annual account of the situation (SOU 2002:7:15).

#### *4.4. Swedish electricity system and the power grid*

The source of Swedish electricity can be divided roughly in two, equally large categories. Half of Sweden's electricity production derives from nuclear power and the other half from waterpower. Heat,

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<sup>13</sup> The Commission on Vulnerability and Security emphasizes vulnerability in power supply as a basic risk intrinsic in modern society. Naturally, this discussion is not entirely new. The forerunner in this respect is the Commission on Threats and Risks (SOU 1995:19).

<sup>14</sup> Since electricity cannot be stored, equilibrium must exist between the energy produced and the sum of loads and network losses (Sveriges energiförsörjning, 2000:7; A Powerful Market, 1999). Keeping the electricity system balance service is therefore vital.

wind, gas and other sources of energy constitute only a few percent of the total electricity production (Infrastrukturuppdraget, 2000:8).

The Swedish power system incorporates production sites and a national distribution system. A national grid, a limited number of regional networks and a large number of local networks comprise the latter. The national grid and the regional networks are meshed networks, while the local networks, which are the ones closest to the end customer, in general are radial feeders. Meshed networks means that there are large numbers of connection positions for the various parts of the grid. A radial grid, on the other hand, derives from a single position and customers are connected along the line. This means that there usually are no alternative ways of feeding if a problem occurs in a radial network, while it is possible to redirect power in a meshed network. For the most part, end-consumers are connected to a radial-fed local network (*ibid*:7). The closer power gets to the end-consumer, however, the fewer the ways of feeding, which means that reconnection options at the event of a disturbance are scarce (Winiarski, 2001).

The Swedish power grid encompasses a number of hierarchically divided cable networks. The national grid is required for long distance transmission of electric power from large power stations to strategically located transformer stations from which power is distributed via regional networks which, in turn, leads to further transformation to local distribution networks which deliver the power to the end consumers (Infrastrukturuppdraget, 2000:7). The Swedish National Grid Company owns and operates the national grid that comprises the country's power lines (400 kV and 220 kV) and stations for electrical energy.

Interruptions to the electricity system occur for different reasons, e.g. technical failures, maneuver errors, extreme weather conditions or deliberate damage. The electricity market reforms have led to a reduced ability to implement damage mitigation efforts (*ibid*:8–12). Because, given the size of the networks and grids and the increasing number of private actors involved in the system, it becomes difficult for supervising agencies to monitor and find accurate information (Rapport, Dec. 6, 1999).

The complexity of the technical structures means increased vulnerability as power supply operation centrals become increasingly geographically centralized and the interdependence between telecom-

munication and IT systems and power networks intensifies (SOU 2001:41:52). For example, the telephone network is extremely dependent on power, and the power supply depends on the telephone network in order to resume operation and initiate repairs following a blackout. Meanwhile, all technical systems are highly dependent on IT support. Meanwhile, critical infrastructure is being internationalized and corporatized (Ds 2001:14:113). At the same time, we see an increase in the use of power (A Powerful Market, 1999:11) and declining public tolerance for power failures (SOU 2001:41). In sum, national and societal infrastructural vulnerability is increasing.

According to the Commission on Vulnerability and Security, regulatory oversight of the power supply field is poor as well as inconsistent. There is also uncertainty among supervisory authorities regarding the division of responsibility for oversight of the power supply. There is, moreover, no regulation that states that the electricity that is delivered should have a certain degree of quality either in terms of reliability of delivery or in terms of voltage quality (ibid:296). This makes it harder for the authorities to implement effective supervision. The Commission also warns of conflicts between the supervisory and promotional roles of authorities (i.e. the Swedish National Energy Administration and the Swedish National Grid Company). In order to achieve more comprehensive responsibility for the supervision of power sector security, the Commission on Vulnerability and Security has suggested that the network division of the Swedish National Energy Administration and the preparedness division of the Swedish National Grid Company be released from their respective authorities and incorporated into a new authority (ibid:295f.).

#### ***4.5. Birka's local power system and the Akalla tunnel***

Birka feeds power into the districts through four 220 kV overhead lines in the Beckomberga grid station. Here power is transformed into 110 kV and subsequently fed to the Hågerstalund transformer station via three 110 kV cables. These cables are pressure oil cables placed on land for 6 km until they reach Granholmstoppen where they are connected to a plastic cable. The cable then continues underground into the Akalla tunnel for roughly 2 km when it reaches

the Hågerstalund station. Here the power is transformed into 33 kV and 11 kV cables and fed to the distribution stations in Husby and Tensta through three parallel 33 kV cables via the Akalla tunnel but through two different corridors (Östlund, 2001:3). In the corridor in question two 11kV cables, three 33 kV cables, three 110 kV cables, tele- control and opto cables are placed. The cables, which are for power, district heating and telecommunication,<sup>15</sup> are located near the point of delivery, and the network station is only fed from one side (Sörbring, 2001c). This means that there are very few options for re-connections once an error strikes the system. The isolated character of the network is unusual, compared to the general network, not least since it involves 110kV main cables. No cables placed at a lower level in the network can be connected as alternative sources, nor is it possible to connect these cables to other networks. At the local level there are no connections between the city districts and adjacent municipalities, i.e. Järfälla, Sollentuna and Sundbyberg, which makes the network vulnerable (Karlsson, 2001c).

The tunnel between the districts of Akalla and Tensta northwest of Stockholm was built in the 1970s and had a specific way of drawing cables that now is outdated. The backup cable was situated just a couple of centimeters from the main cable. Nowadays the cables are built in sections so they are protected from one another (Lindström, 2001). On the topic of the factual age of the cables, Birka's manager of operations Ingemar Karlsson has stressed that the cables were not too old (SVT 24, March 12, 2001). Without being specific, Birka spokesmen (e.g. Thomas Gustafsson) said that the cable that caused the fire was constructed in the 1970s. The cable in question was paper coated connected to plastic.<sup>16</sup> Paper coated cables can last for more than 100 years if the temperature is right whereas plastic cables do not last as long (Karlsson, 2001c).

For the complex technical system, safety is largely dependent on the reliability of mechanical surveillance. The power is measured by a computerized system that gives an indication to a circuit breaker, which cuts the power if there are irregularities. In the event of a fire,

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<sup>15</sup> See Appendices 2 and 3 for visual schematics of the network, the tunnel and fault location.

<sup>16</sup> The cable was made of PEX (Crosslink polyethylene), which means that it was plastic coated. Such cables can be subjected to higher pressure and temperature than ordinary cables ([www.energilexikon.nu](http://www.energilexikon.nu)).

an alarm bell is supposed to sound in Birka's command center and indications should appear on the screens (Karlsson, 2001c).

#### ***4.6. Central actors and crisis organization***

The study aims to give a broad picture of the City of Stockholm's crisis organization. As such, a number of actors are presented, ranging from operational units and public administrations to public as well as private companies. Among the actors outlined in the study, Birka Energi, the Stockholm Fire Department and the district administrations are of central interest. However, other players became involved in management of this crisis or drawn in as crisis copers due to the repercussions of the blackout.

##### **4.6.1. BIRKA ENERGI**

Birka Energi sells electricity, heating, power networks, cooling, consultancy and service. Its main line of business is distribution and sale of electricity and power production. Birka Energi consists of seven subsidiaries.<sup>17</sup> In 2001, Birka employed some 3,200 people (SvD, 2001), and was Sweden's largest energy company in respect to its number of customers and the third largest in terms of production capacity. Birka Energi was founded in 1998 by the merger of Gullspång Kraft and Stockholm Energi but the historical core of the company dates back 110 years ([www.birkaenergi.se](http://www.birkaenergi.se)). At the time of the Kista blackout, Birka Energi was a municipally owned company. Fifty percent of Birka was owned by Stockholms Stadshus AB (owned by the City) and the other fifty percent belonged to Fortum Power and Heat AB, which is in turn part of the Finnish energy corporation, Fortum OY (listed on the stock exchange, but the Finnish State authorities have 75 percent ownership). Tomas Bruce was Managing Director of Birka; the Chairman of the Board was Stockholm Commissioner Carl Cederschiöld. In 2000, Birka Energi had a net turnover of EUR 1,462.61 billion. ([www.birkaenergi.se](http://www.birkaenergi.se)).

In March 2001, Birka Energi was still very much a public company but in the midst of a privatization reform. The City was planning

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<sup>17</sup> Birka Support AB, Birka Teknik & Miljö AB, Birka Värme AB, Birka Nät AB, Birka Energy Securities AB, Birka Service AB and Birka Kraft AB. It also has a separate division for marketing, Birka Marknad AB (Birka Energi, 2001).



to sell off its 50 percent share in Birka to Fortum (Nilsson, 2001b) According to Carl Cederschiöld, the political majority in City Hall had in principle, by a statement in the 1999 financial plan, agreed that taxpayers money should not be risked in the competitive energy sphere (TT, 2001). The County Council held a vote on the issue on December 17, 2001. After a fierce discussion between the center-right parties in majority and the left minority, the majority's proposal passed with 50 votes against 44. Birka merged into Fortum as of April 1, 2002 (Tottmar, 2001; Birka Press release Feb. 27, 2002).<sup>18</sup>

Birka Energi AB has established contingency plans for its subsidiaries, Birka Kraft AB, Birka Marknad AB, Birka Nät AB, Birka Support AB and Birka Värme AB. In addition, a special crisis management team is to be established if a contingency occurs (Bilaga till kommunstyrelsens beslutsprotokoll; henceforth referred to as BKB, 1999). Safety measures are administered and checked between once a year and every fourth year (Karlsson, 2001b), and Birka maintains a 24-hour alert for disturbance calls. In the event of a disturbance, the manager of operations is to call in personnel to support the duty staff with operational crisis management. The group then has *carte blanche* to solve the disturbance (Källström, 2001:29).

#### 4.6.2. THE STOCKHOLM FIRE DEPARTMENT

The Stockholm Fire Department's responsibilities include fire and rescue services in Stockholm, including the coordination of municipal emergency planning and planning rescue services during increased emergency alert together with the City Executive Office (SBF, 2001:18).

Fire departments tend to be organized according to a bureaucratic and military model (Dynes, 1970:24). The Stockholm Fire Department is divided into 12 divisions, each responsible for its own district. Collectively, the divisions consist of at least 114 people. The Fire Chief leads the operations and has a staff at his disposal. The fire engineer and two communications officers lead operational actions. Each unit involved in a mission has its own person in charge. The Senior Station Officer on operational duties and Senior Station Officer

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<sup>18</sup> Birka Värme AB, which produces heating, stands outside the deal and will continue to be shared by Fortum and the city (Tottmar, 2001).

er on administrative duties at the headquarters carry out the coordination of the units. If the contingency is considered severe, the Rescue Commander assumes on-site leadership and the staff is increased (Robertsson, 2001).

In an operation, the fire department's leadership on the scene is divided into three levels: management individual unit (sector commanders), coordination individual units (incident commander who handles friction between units) and operational management (Rescue Commander) (Hornyak, 2001:13; Svensson, 2001). The fire department has three levels of staff preparedness. Green level stands for normal preparedness around the clock under the command of the Fire Chief and the Senior Station Officer on administrative duties and two communications officers. In the remaining levels of preparedness, leadership is also the responsibility of the Fire Chief, but management on the middle level is more complex and wide-ranging. The yellow level signifies that a minimum of two fire stations are expected to be involved in events for at least two hours, or no less than three stations for at least one hour. The yellow level turns to red when at least three stations are expected to be operating for six hours or if at least four stations will be deployed for at least two hours (Robertsson, 2001). Increased staff preparedness occurs approximately once a month (Gustafsson, 2001:11).

If the threat is severe, rescue service may be initiated according to the Rescue Service Law.<sup>19</sup> Its second paragraph states that for the effort to be considered as rescue service, four criteria need to be fulfilled: the need for a rapid action, the importance of the interest at risk, the costs for the operation and remaining circumstances. The Rescue Service Law, which has preferential right of interpretation before other laws (1986:1102) sets the standard for leadership in municipal and city rescue operations (§31). §32 determines who is in charge. In the municipal rescue service it is the Rescue Commander or the person that he has appointed (§32:1). In other cases, it is the one appointed by the authority in charge (§32:3).<sup>20</sup> In the case of a major rescue service, the government may direct management over one or more municipalities to the County Administrative Board or another state authority. Under such circumstances, the government authority in charge appoints the Rescue Commander (§33).

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<sup>19</sup> At the time of the blackout, the Rescue Service Law was being revised.

<sup>20</sup> Alpine rescue services are an exception, however.

Besides the operational role described above, the Stockholm Fire Department also has a strategic role in the capital's crisis management. When a crisis or a serious contingency occurs at the local level, the Fire Department is expected to assume the role of city coordinator. This arrangement is relatively new and was outlined in "Management and Coordination of Efforts in times of Severe Societal Strain," a protocol handed to the Fire Department after a decision approved by the Fire and Rescue Board in March 1999. In the event of the occurrence of a contingency considered to present a severe strain on society, municipal management shall establish a municipal management group meeting in collaboration with the Fire Chief (SBF Protokoll 3/99, §2;BKB). Hence, it is stated in emergency plans that the Fire Department and the City Executive Office are responsible for coordinating the City's efforts during a contingency by assembling the actors involved in coordination meetings. These meetings are supposed to serve as a forum for stakeholders to discuss issues and make decisions. Meetings shall take place at the Center of Rescue Operations at Johannes Fire Station in Stockholm City (SBF, 2001:1ff).<sup>21</sup>

This arrangement came about due to the uncertainties surrounding the turn of the millenium (Y2K). In good time before the new millennium, the City scrutinized existing emergency planning and found that a coordinating actor was necessary during critical contingencies. "The Y2K-project" was then initiated to coordinate the City's work and to call regular meetings with Y2K managers in order to exchange knowledge and information. Highest priority in the City's Y2K efforts was given to services crucial for the life, health and safety of citizens followed by functions that might affect the finances of citizens as well as strategically important components of the city's services. In accordance with prior council decisions, district administrations and municipal companies have set up emergency preparedness plans for vital services with an emphasis on possible failures in telephone communication, electricity, water and heating. Some 60 administrations and companies established such schemes, which were later scrutinized by the City's 2000 Council and the Fire Department (BKB).

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<sup>21</sup> The Center of Rescue Operations encompasses 3,000 square meters and is built into rock, 30 meters below Johannes fire station. It was inaugurated on November 21, 1997 ([www.brand.stockholm.se](http://www.brand.stockholm.se)).

#### 4.6.3. THE DISTRICT ADMINISTRATIONS

All 18 of the district administrations (DA's)<sup>22</sup> have their own Board. A Board consists of 13 members, chosen through a proportional electoral system. Political parties nominate the members and the Municipal Council elects them. Depending on the aim and the funds made available to the district boards by the Municipal Council, district boards make decisions concerning "soft" issues such as the local environment and employment, pre-schools, schools and social services. The DA's then distribute the resources. A district director leads every DA and its staff. The DA is also divided into a handful of entities with specialist functions relevant for local affairs. A DA can be responsible for several districts. Kista DA, for example, encompasses Akalla, Kista and Husby ([www.stockholm.se](http://www.stockholm.se)).

Kista district administration is led by the District Director (then Luis Abascal), who has overall responsibility for activating emergency planning and coordinating local leadership during crises and contingencies (Abascal, 2001). This form of crisis organization was initiated by the church and established against the backdrop of a bus accident in Norway. In August 1988, 15 schoolchildren and 3 adults lost their lives in a bus accident in the Måbødal tunnel east of the Norwegian city of Bergen. All 18 studied or worked at Kista's Kvarnbacka School and the incident traumatized the community. As a consequence, the DA's emergency planning was directed to a large extent towards psychosocial matters, and other elements were later added over the years (Wohlfarth, 2002). In 2001, emergencing planning in Kista DA involved crisis management programs, networks and yearly training. The emergency plan stated who should be called to the meetings, what role each participant should have, how to reach participants and where they should meet. The crisis group is supposed to gather people from district management groups such as the Kista Fire Department, rescue services, the police, social psychiatry, primary care and the Church. Kista's contingency plans are tested twice a year via scenario training (Abascal, 2001).

Rinkeby DA had an emergency plan and it stated that a management group comprised of senior managers should be established during contingencies (SBF, 2001:12). The plan included major black-

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<sup>22</sup> The district administrations (DA) particularly relevant to this study are Kista DA, Rinkeby DA and Spånga-Tensta DA.

outs. In Spånga-Tensta DA's contingency plan, events such as black-outs were planned for, but emergency schemes had never been activated. These schemes stipulated a certain meeting place for the crisis management team: the Fristad service building (Spånga-Tensta stadsdelsförvaltning, 2001:2f. Henceforth referred to as STSF). Spånga-Tensta, Hässelby-Vällingby, Kista and Rinkeby all set up contingency plans before Y2K (BKB, 1999).

#### 4.6.4. THE MILITARY AUTHORITY

The Military Authority (Central Military District) maintains 24-hour alert for emergencies at its HQ in Strängnäs and presides over military voluntary organizations. At the time of the blackout, its contingency plan was under consideration. Nonetheless, the Central Military District has developed routines for how to employ its crisis scheme (Wijkström, 2001). In terms of voluntary organizations, the Home Guard is the Military Authority's national protection force. If Home Guard preparedness is called for, members should be ready for action within two hours. Besides the more military missions, such as confronting potential armed attacks, maintaining territorial integrity and protecting societal infrastructure against sabotage, the Home Guard is also tasked with supporting society in the event of severe strain ([www.hemvarnet.mil.se](http://www.hemvarnet.mil.se)). The Swedish Civil Defence League is a non-profit organization within the total defense that comprises some 32,000 people. Its mission is to increase public awareness about threats and risks. The Civil Defence League conducts training in such areas as emergency preparedness, and in the event of an emergency, it assists state and municipalities in aid and information efforts ([www.civil.se](http://www.civil.se)).

#### 4.6.5. MUNICIPAL AND PRIVATE COMPANIES

In terms of municipal companies, AB Svenska Bostäder is the largest owner of residential and commercial properties in the affected area with 9,000 apartments, district administration offices and five houses for the elderly and disabled (SBF, 2001:21). Svenska Bostäder established contingency preparedness plans before the turn of the millennium (BKB, 1999). It also has a crisis organization and prepared emergency teams. Stockholm Vatten produces and supplies drinking water

to more than one million people in Stockholm. The bulk of the company is owned by the City of Stockholm through Stockholms Stadshus AB ([www.stockholmvatten.se](http://www.stockholmvatten.se)). Stockholm Vatten AB has an established contingency and preparedness scheme. The company also has a special preparedness team that is trained to deal with similar situations (Persson, 2001a).

Among the many private businesses that were affected by the blackout, Ericsson is perhaps the most significant one. Ericsson is one of the world's leading suppliers in telecommunications. The corporation has vital parts of its organization, such as Ericsson Radio Systems, located in Kista. Ericsson has developed a crisis scheme that entails checklists and crisis group meeting in a "war room." The company's crisis organization offers training on a regular basis. Ericsson Radio Systems' security manager, Stellan Svensson, is responsible for assembling the crisis group and coordinating crisis management activities (Svensson, S., 2001).

Two neighboring printing companies in Akalla print four daily newspapers. As both companies were powerless during the power outage, all four publications were threatened. The main actors that were affected in this matter were two printing companies, Tidningstryckarna and DNEX; the morning papers, Dagens Nyheter (DN) and Svenska Dagbladet (SvD); the tabloids, Aftonbladet and Expressen, and a popular, free local morning paper, Metro.

#### 4.6.6. THE CITY'S COORDINATION GROUP

Most of the actors outlined above were directly involved in the management of the crisis by participating in the City's coordination group at Johannes Fire Station's Center of Rescue Operations in Stockholm City. In keeping with existing contingency plans, this coordination group held five group meetings presided over by the Fire Chief. The participants were the City Manager, representatives of Birka, the Rescue Service, the district administrations of Kista, Rinkeby and Spånga-Tensta, Information City Hall, Stockholm Vatten, the Stockholm Police Department, the Military Authority, the County Admin-

istrative Board, SOS Alarm, the Social Services, Connex<sup>23</sup>, Svenska Bostäder and Familjebostäder (SBF, 2001:6;33).

#### 4.7. *Previous experiences*

Normally, the Swedish power system is highly resilient, especially in an urban setting. When blackouts do occur, they are most often relatively short and local and are caused by bad weather. In recent years, however, a number of serious power-related incidents have struck the power system. In geographical terms, the most wide-ranging blackout ever to occur in Sweden took place on December 27, 1983 when a separator in a transformer station in Enköping ignited. The blackout affected seven million people in mid and southern Sweden. Some were without power for ten hours (Aktuellt, March 12, 2001). In later years, long-lasting and large-scale blackouts have been uncommon, and when they occur, it is usually in rural areas. In November 1995, for instance, snowstorms over western and southern Sweden (Götaland and southeastern Svealand) led to blackouts affecting 30,000 households (Kasvi, 1995). Trees fell over power lines, which caused Gothenburg's peripheral networks to lose power. For some households, the waiting period for power was almost a week (Christiansson, 1999:21–26). During New Years 1998, large amounts of snow led to a blackout affecting some 25,000 homes in the Höga Kusten area. In December 1999, 130,000 homes in southern Sweden were left without power in the aftermath of a hurricane (Aktuellt, March 12, 2001).

Blackouts have also struck the heart of Stockholm. In early April 1989, 11 kV power cables in a tunnel in the western part of Stockholm City caught fire. This incident was not as acute as the one twelve years later as the cables were less powerful, feeding power to fewer end-users, and it lasted about half as long as the Kista outage (Sörbring, 2001a). In November 1999, an overload occurred in a cable in Birka's power station in Koltorp in the east of Stockholm. Although power was restored by connecting to a backup cable, the outage lasted for an hour and a half leaving 10,000 clients without elec-

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<sup>23</sup> In Kista, the subway was affected with irregular stops throughout the morning of March 11, but no trains stopped in the tunnels, so no evacuations were necessary (SBF, 2001:5). All in all, this was not a contingency for Connex. Traffic was maintained at almost full effect (Ekström, 2001a:1–3), and the contingency plan was never implemented (Ekström, 2001b).

tricity (Bengtsson, 1999). In September 2000, a blackout took place cutting the power for 64,000 clients in the south of Stockholm. It was caused by an explosion of a switch in Birka's network station in Örby. Power was restored within one hour (Zakai, 2000).

Faults on 110 kV power cables are extremely rare, but in May 1999 an excavator damaged two 110 kV cables in Birka's power station in Bredäng south of Stockholm. 75,000 Birka clients in the southwestern suburbs and parts of south central Stockholm, as well as the subway, were affected by the blackout. Almost two hours later the cables were repaired and power was restored (Martinez, 1999). In terms of the number of incidents, the Akalla tunnel is over-represented. Cables inside the tunnel in question have burnt three times within seven years although the latest occasion was the only one in which 110 kV cables were damaged (Karlsson, 2001c).<sup>24</sup>

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<sup>24</sup> Major Swedish power supply incidents are listed in Appendix 4.



## 5. Chronology of Events

### SATURDAY MARCH 10

A program error in the fire monitoring system in Birka Energi's cable tunnel between Akalla and Hässelby, northwest of Stockholm occurred, which rendered the fire alarm in the system out of order (SBF, 2001:5; Karlsson, 2001c).

### SUNDAY MARCH 11

At 4:21 a.m. Birka and its command center got an indication of a cable failure in the Akalla area. It turned out to be more than a technical error. It was a phase ground fault<sup>25</sup> in one of the 11 kV cables. From 4:21 until 4.33 power from three network stations continued to run through the failing cable. Possibly the fire was already a fact (Norgren, 2001:1–2) but because of the non-functioning fire alarm Birka's service staff did not suspect that a contingency was unraveling. The lingering ground failure current increased the heat in the damaged cable, which led to a spark that ignited the cable. The fire then spread to all nearby cables (Sörbring, 2001b). At 4.33, the failing cable was disconnected by the phase ground fault protection in the feeding station. Birka's service staff located the failing cable, disconnected and grounded it and connected the backup.

Between 4:33 and 5:05 a.m., 500 of Birka's clients lost power due to the cable fire (Birka Bildserie, 2001). At 6:45 a.m., an automatic alarm indicating a line fault in the tunnel reached the Fire Department. The alarm did not indicate high priority, rather a technical error and therefore the alarm was forwarded to the service guard that served the tunnel (Hornyak, 2001:6; Gustafsson, 2001:5). Between 6:57 and 7:00 two 33 kV cables broke down and feeding to the stations Hägerstalund, Husby and Tensta came to a halt. Now remote activity readings of the tunnel also broke down (Östlund, 2001:1). This led P.O. Nilsson, Birka's engineer, who was in his home but had been informed about the development, to suspect that there might be a fire in the tunnel. According to Birka's assessments, he called the

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<sup>25</sup> A phase ground fault occurs when the material or fluid that conducts electric power is exposed to earth (energilexicon.nu).

Birka command center, which, in turn, called the Fire Department around 7:00 a.m. (Karlsson, 2001c). At the same time, Birka service personnel returned to the tunnel. Now they feared that the cable failure was more serious than first expected, especially since new failure warnings indicating that cables were breaking down had appeared at 6:57 and at 7:00 a.m. The Birka Service guard was met by smoke coming out of the tunnel. He had done reconnections on two prior occasions but this time all he could do was to alert the Fire Department that there definitely was a fire. The SOS alarm registered the call at 7:06 a.m. (SBF, 2001:16; Gustafsson, 2001:5).

The Kista Fire Department took the call and on its way to the premises, at 7:15 a.m., it was met by a heavy build-up of smoke and immediately called for back up (SBF, 2001:5). Back up was provided by firefighters at Vällingby Fire Department who were on site at 7:25 a.m. Simultaneously, rescue service was alerted and the team from Johannes Fire Station reached the Akalla tunnel at 7:33 a.m. At 7:40 a.m., the Rescue Commander, Göran Svensson, forwarded a situation report to the Senior Station Officer on administrative duties, Stefan Flyckt, which stated that the extinction would take more than one hour. Seven minutes later Svensson changed the prognosis into more than two hours. Around the same time, the Senior Station Officer called Lars Hallander, the Fire Chief, to brief him about the situation. They held a discussion on increasing the Fire Department's staff preparedness and the Fire Chief made his way to the Center of Rescue Operations. Hallander also requested that a representative from the police and from Birka should be present at the Center of Rescue Operations (Hallander, 2002). At 8:08 a.m., the Fire Chief raised staff preparedness to yellow (Hornyak, 2001:7).

As soon as Birka realized the magnitude of the incident, P.O. Nilsson at Birka contacted the traffic department at the local radio station Radio Stockholm<sup>26</sup> as well as the subway to inform them about the blackout (Utvärdering av Birka Energi, 2001, henceforth referred to as UBE; SBF, 2001:4). At 8:30 a.m., the first report about the cable failure was issued on Radio Stockholm. Following information issued from Birka, the radio station announced that the problems would be taken care of and that repair work would continue un-

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<sup>26</sup> In Källström (2001:27) it is stated that Birka and Radio Stockholm had reached an agreement that, at the event of a blackout, or a similar contingency, Birka should inform Radio Stockholm, which, in turn should inform the public.

til the evening. Throughout the day, Radio Stockholm informed in all regular news programs as well as in traffic bulletins (Hansson, 2001).

At 9:27 a.m., firefighters located the fire. The Rescue Commander ordered Birka to cut the power and the cables were disconnected within 30 seconds. Having already affected Tensta, large parts of Rinkeby and parts of Bromsten, Vällingby and Spånga, the blackout now affected 19,000 Birka customers in Kista, Akalla, Husby, (Karlsson, 2001a). The lion's share of these would be without power for more than 30 hours (Birka Bildserie, 2001).

At 9:30 a.m., Birka's manager of operations, Ingemar Karlsson, called Ove Johansson at the constructor of the cables ABB High Voltage Cables in Karlskrona in Southern Sweden and their experts were called upon to piece together the failed 110 kV cable (Karlsson, 2001b).<sup>27</sup>

The fire was out by 9:50 a.m. (Hornyak, 2001:8), followed by the final extinction and ventilation phase, which took a couple of hours (Sörbring, 2001b). In the meantime, around 10:00 a.m., P.O. Nilsson, Birka's engineer, informed Radio Stockholm that power would be restored in the evening at 10:00 p.m. At 11:00 p.m., power was successfully restored for 3,000 Birka clients (Birka Bildserie, 2001).<sup>28</sup> According to Roger Engberg, installation manager at ABB High Voltage Cables, ABB cable expertise staff that happened quite fortuitously to be in Stockholm that weekend (Bruce, 2001) were on location to investigate the damages at approximately the same time.<sup>29</sup> However, it took until roughly 2:00 p.m. before the Fire Department handed over the premises to Birka, and experts were allowed to enter the tunnel (Gothnier, 2001). Half an hour later, the inspection was concluded (Karlsson, 2001a). About the same time, staff at ABB in Karlskrona went into hectic action to organize a reparation task team (Gothnier, 2001). Birka Service began repairs on the damaged 33 kV cables at 3:10 p.m. All cables at the incident site, including the three

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<sup>27</sup> At this time, Birka believed that only one 110 kV cable was damaged. According to Roger Engberg, Installation Manager at ABB High Voltage Cables, they were contacted at around 11:00 a.m. (Gothnier, 2001).

<sup>28</sup> After reconnections in the 11 kV network, 3,000 customers that were fed through the Tensta transformer station (33/11 kV) could be fed from two adjacent transformer stations (33/11 kV) in Bromsten and Vällingby. Because the other affected 33/11 kV transformer stations (Hägerstalund and Husby) were built into so-called concession areas, which often share the same borders as municipalities, there were no possible connections to other 11 kV networks (Karlsson, 2001d).

<sup>29</sup> According to Birka sources a team of two ABB workers were flown in from Karlskrona and on the scene at 12.00 (Birka Bildserie, 2001).

110 kV cables, had to be pieced together (Birka Bildserie, 2001). Now it also became evident that the first official estimations regarding the length of the blackout would not hold, and at 3:30 p.m., P.O. Nilsson at Birka told Radio Stockholm to inform the public that the blackout would last longer than first predicted (Hansson, 2001; Karlsson, 2001b).<sup>30</sup>

When most parties understood that the blackout would last until at least Tuesday, commotion intensified at Birka and in the powerless districts. In the meantime, the Fire Department's Information Manager, Jan Haenel, happened to be listening to the radio and realized that a crisis was in the making. Haenel believed that the event was severe enough to warrant the initiation of information and coordination efforts, so he contacted the Fire Chief Lars Hallander (Andersson, 2001a; 2001c; SBF, 2001:19). Hallander conferred with the City Manager, Jörgen Kleist, and began to arrange for a coordination group meeting at the Center of Rescue Operations (SBF, 2001:6) in accordance with the Fire and Rescue Board's contingency plan. By 6:00 p.m., Hallander had contacted practically all parties that would make up the City's coordination group (Andersson, 2001a). Half an hour later, Birka held a press conference addressing major national and local media (Sterner, 2001:1).

At 8:00 p.m. the City's coordination group began its first meeting at Johannes Fire Station.<sup>31</sup> Later in the evening, all affected DA's met separately to discuss what efforts should be taken to secure the well being of the citizens (Löfberg, 2001).

## MONDAY MARCH 12

The City's coordination group held its second meeting at 1:00 a.m. The group decided to apply a common information strategy based on the idea that all information should pass through the group (SBF, 2001:33).

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<sup>30</sup> Prior to Birka's first official statement, Birka customers who contacted Birka for information received the reply standard during blackouts, namely that power would be restored within two hours. The actual number of people who received this reply remains unknown (Karlsson, 2001e).

<sup>31</sup> Participants were Birka's Duty Engineer, Nils Wikström, and Information Manager, Thea Sterner; Rescue Commander, Göran Svensson; City Manager, Jörgen Kleist; the City's Information Manager; representatives of the Kista, Rinkeby and Spånga-Tensta district administrations; Stockholm Vatten; the Stockholm Police Department; the Military Authority (MDM-Hvbat-Nord); the County Administrative Board; SOS Alarm; Social Services; Connex, and the major housing companies, Familjebostäder and Svenska Bostäder (SBF, 2001: 6 & 33).

Throughout the night, 24 police units made their presence felt on the dark streets. Normally, five police cars patrolled the areas in question. Despite the number of police units, 30 break-ins were committed, mostly entailing the theft of computers belonging to businesses, as well as one personal robbery and one rape—slightly more criminal activity than usual. However, there were also a number of false alarms due to the power outage (Nilsson, 2001a).

During the night, more equipment and personnel from ABB in Karlskrona arrived in Stockholm (Gothnier, 2001).<sup>32</sup> At 4:00 a.m., Birka Service repaired the three damaged 33 kV cables, and an hour later, ABB experts began work on connecting the 110 kV cables (Birka Bildserie, 2001; SVT 24, Mar. 12, 2001; Karlsson, 2001a).<sup>33</sup> At 7:00 a.m., Svenska Bostäder employees began handing out printed information to their tenants (SBF, 2001:21). A quarter of an hour later, the first mobile generator was connected to Tensta service home in accordance with emergency planning (ibid:34).

Birka's crisis management group held its first meeting for the day at 8:00 a.m., and meetings involving between eight and 13 people continued throughout the day (Sterner, 2001:1). At the same time, district administration cars supplied with speakers circulated the streets of Husby to inform the public of the latest developments in several languages—Farsi, Somali and Eritrean (SBF, 2001:34; Abascal, 2001). In the meantime, Kista DA held its first meeting with the crisis group, which had by then grown to include three additional members, including two managers from Social Services.

The third meeting of the City's coordination group started at 10:00 a.m. Birka Nät's Nils Wikström informed the participants that repair work was going better than planned (Persson, 2001b:5). Fire Chief Lars Hallander hosted the meeting, but Bengt Wall, the Fire Chief ready to replace Hallander, was also present at the meeting (Hallander, 2002).

At 11:00 a.m., all Svenska Bostäder houses for the elderly had backup heating (SBF, 2001:34). Meanwhile, ABB experts were working on connecting the 110 kV cables. The experts noticed that one of the cables might be repaired by a temporary solution on-site, a meas-

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<sup>32</sup> ABB tried to arrange for the National Defense to fly the equipment in by helicopter, but due to bad weather conditions, this was not possible (Karlsson, 2002).

<sup>33</sup> According to Roger Engberg of ABB in Karlskrona, the first ABB repair team went into the tunnel at 4:30 a.m. (Gothnier, 2001).

ure that would shorten the duration of the blackout considerably. Almost immediately, Birka's crisis management group was informed about the new forecast, which was changed from March 13, 10:00 p.m. to March 12, 8:00 p.m. (Stern, 2001:2).

At 12:00 noon, Birka Service's repair work on two of the 11 kV cables ended (Birka Bildserie, 2001). Birka's second press conference took place two hours later. The new forecast was announced, and there were pleas to the public to use electricity carefully once the cables were connected since capacity would remain limited (Stern, 2001:2). Half an hour after the press conference, Radio Stockholm informed listeners that power would be restored in the evening (Hansson, 2001).

Bengt Wall, the new Fire Chief, opened the fourth city coordination meeting at 3:00 p.m. Among other things, Birka briefed the group about the press conference earlier in the day (Arkel, 2001).

Four cable experts from ABB worked throughout the day, and a replacement force flown in from Karlskrona continued the job throughout Monday night. At 6:00 p.m. Monday, ABB had mended the first 110 kV cable, and after 33 hours and 39 minutes without power, power was restored in Kista at 7:06 p.m. After 33 hours and 55 minutes without electricity, power was returned to Husby/Akalla at 7:20 p.m. After 37 hours and 19 minutes, lights were back on in Tensta at 8:35 p.m. (Birka Bildserie, 2001). Power had now been restored to all Birka customers.

#### TUESDAY MARCH 13

Although power was restored, the City's coordination group, chaired by Bengt Wall, held its fifth and final meeting at midnight. Birka informed the coordination group about the restoration process (Persson, 2001b:5), and since the group had now accomplished its mission, participants decided to disband after the meeting (e.g. Stern, 2001:2). Repair work continued in the early hours, and at 6:00 a.m. on Tuesday, the second 110 kV cable was repaired by ABB. Now Birka was able to deliver electricity with full power capacity, but without any backup (Birka Bildserie, 2001).

The Fire Department's administrative group assigned to coordinate management of the blackout was dismantled on Tuesday at 7:30 a.m. (Gustafsson, 2001:8).

At 5:45 p.m., a short circuit in an 11kV cable triggered a new blackout affecting 800 households in Akalla and Husby. After reconnection, power was restored at 7:08 p.m. Although the same area had been affected twice, Birka claimed that the two failures were not linked (Birka Press release, 2001a).

#### THURSDAY MARCH 15

Birka held a supervisory group meeting on the issue of compensation and a number of other issues. It was decided that only private citizen customers would be remunerated, whereas local companies would have to reach settlements with their respective insurance companies (Mavi, 2001).

#### FRIDAY MARCH 16

ABB concluded its repair work on the third 110 kV cable by 4:00 p.m.

#### SATURDAY MARCH 17

At 6:00 p.m. Birka Energi was operating at full power backup.

#### MID APRIL

Claes Tornérhielm of the Husby Center Business Association coordinated local storeowners' financial compensation claims and submitted them to Birka's company lawyer.

#### END OF MAY

The Business Association, the DA's and Svenska Bostäder assumed a more active role in the compensation case, although the case remained unsettled (Tornérhielm, 2001b).





## 6. Decision Occasions

During a crisis, decision-makers are often confronted with a number of critical decision-making problems. Such decision occasions are not to be confused with occasions when a decision is made. Rather, what is meant by a decision occasion is a situation in which decision-makers face a problem that they feel compels them to make a choice about whether to act or not to act (Sundelius et al, 1997:30). In other words, these are occasions during which the coping capacity of decision-makers is challenged, and they must ask themselves, "What do we do now?" The actions that decision-makers then take have the potential to shift the course of events for better or for worse.

Following 't Hart, Rosenthal and Kouzmin (1993:25ff.), this study makes a distinction between the strategic and the operational level of decision-making and decision-makers. Strategic refers to top-level, often political decision-makers and senior policy advisers, whereas the operational level encompasses line managers and field agencies concerned with first-line operations and policy implementation. This institutional hierarchical dimension of decision-making means that the strategic decision-maker tends to be a high level politician who does not handle de facto management of the crisis, barring an occasional visit to the crisis location. Operational decision-makers, then, make the real decisions, such as putting out a fire.

It should also be noted that, to a large degree, decisions can be classified according to their actual importance in shaping the development of a crisis. In this view, strategic decision-making refers to decisional levels at which crucial decisions are made, whereas operational decisions focus on technical issues and details of implementation. It is not uncommon that initial decisions, which are often operational, largely determine how a crisis develops. Political/administrative decisional levels are then left to monitor these developments. In line with this functional perspective, major strategic crisis management decisions are made at lower levels of the governmental hierarchy. This distinction thus questions the thesis that crisis decision-making occurs at the top of the institution. On the contrary, critical decisions are made at different levels both within and between organizations (ibid.).

It can also be fruitful to look at how decision units are composed. Decisions can be made individually, for example, as well as in dyads or in a group setting. Among group interactions, the small group is of special interest when it comes to crisis management organization. Small groups range from four to a dozen, and crisis management organization relies heavily on such structures. The small group is a common crisis management instrument that triggers group interaction patterns different from those set in motion by dyads and trios. Such interaction patterns, including conformity, groupthink, and bureaucratic politics, may deter the decision-making process (Stern, 2001:60ff.).

### *6.1. A technical error in the tunnel*

The initial impetus for this decision occasion occurred when Birka received the first indication that something was wrong in the Akalla tunnel. It was a decision occasion for the Birka operational staff only. When the first report of a technical error appeared before Birka's staff, it was not seen as an extraordinary event. The first alert, which came at 4:21 a.m. on March 11, only indicated a technical failure in one of the 11 kV cables. Birka acted accordingly and sent a service team out to make the reconnection. Following procedure, the service team disconnected the cable, and from a customer-oriented perspective, the problem was solved. Because the service personnel had no way of knowing about the severity of the problem, however, the phase ground fault was left unattended, and the heat subsequently increased inside the cable, which led to its ignition. Had there not been an error in the fire monitoring system, a fire alarm probably would have reached the command center at this stage and Birka's reaction would have been a different one altogether (UBE, 2001; SBF, 2001).

When the first reconnection to a backup cable in the network was complete, all Birka customers had power, and the problem seemed to have been resolved. Such incidents happen once or twice a week, and in accordance with standard procedure, repair work was left for the office hour staff (Karlsson, 2001c). At the time, no one was aware of the fact that the cable was overheated and that an emergency was unfolding. This perception, shared by all of the actors at that time, influenced their reactions and actions.

The screens in Birka's command center gave no indication of this type of back feeding. In addition, the fire alert program was out of order. Ideally, Birka's command center is equipped to register the failure of a program, but this did not happen here. Consequently, no fire alarm reached Birka, and general experience suggested that there was no urgent problem (Karlsson, 2001c).

When the second error occurred, a service team was sent to the site again to make reconnections. At the same time, internal communication cables at Birka, which derive from the same power station, suffered disturbances. When Birka engineer P.O. Nilsson was informed about the errors, he saw a pattern, suspected that there could be a fire in the tunnel and ordered the command center to notify the Fire Department (Karlsson, 2001c).

The operational decision was to act according to standard procedure and to make the reconnections without actually undertaking a visual inspection of the premises. When additional indications of failure appeared, an individual and operational decision-maker at Birka suspected that this might be more than an everyday event and took action.

## ***6.2. The power cables are on fire***

This decision occasion was prompted by a security guard, who sent out an alert indicating a fire to the command center at Birka and the Fire Department at approximately 7:00 a.m (UBE, 2001; SBF, 2001). At this stage, the fire in the tunnel was beyond Birka's control and had become a job for the Fire Department. Hence, this was a decision occasion primarily for the Fire Department. Operational decision-makers at the Fire Department were faced with different options concerning what action to take. More specifically, they had to decide the number of units that should be involved in the operation and how firefighters should confront the fire. As the owner of the tunnel in question, Birka, too, had to act. Birka responded with the rapid organization of the operational staff, but reactions were slowed by Birka's inability to believe that all three of the 110 kV cables might be damaged.

Once Birka's engineer alerted the Fire Department, his next move was to call the Manager of Operations, Ingemar Karlsson, who was at home. Karlsson responded by immediately sending a text message

via his cellular telephone to company management. The message read that there was a fire in the tunnel. Meanwhile, at Birka's command center, there were increasing indications that the 33 kV cables were failing.<sup>34</sup>

Karlsson's message did not reach all recipients immediately.<sup>35</sup> Given the urgency of the situation, Karlsson decided to head directly for the office instead of wasting valuable time sitting by the phone, trying to reach every member of Birka's management. In line with contingency plans, Birka's Chief Engineer, Folke Lundberg, also went to Birka's head office, and at a later stage, additional engineers were called in. Gunnar Branger was assigned to go to the tunnel<sup>36</sup> and Bengt Herou joined the Center of Rescue Operations at Johannes Fire Station (Karlsson, 2001c). It was now evident to Birka staff that there was a major contingency at hand. However, Birka managers still ruled out the possibility that the fire would damage all of the 110 kV cables.

Because the situation was characterized by such uncertainty, Birka's fire alert to SOS alarm failed to convey the severity of the situation. The essence of the alert signified that there was smoke coming from the tunnel. The Kista Fire Department took the assignment, since it was geographically closest to the tunnel. The entire staff of nine people was called under the command of Fire Chief Mats Tolkvist, who initially became sector commander. When the firefighters were 1.2 km from the site of the fire, they spotted smoke rising from the ground at another location. This led them to the conclusion that smoke was coming from both ends of the tunnel, and that the fire was more comprehensive than first thought. The Kista Fire Department team immediately called for backup from another fire station. Vällingby Fire Department was then assigned to the operation, thus involving two departments and so the appointment of a Rescue Commander to handle management and coordination between the units. As stipulated in fire department contingency plans, a Fire Chief was called upon to coordinate the different departments involved in the

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<sup>34</sup> In early reports, it was stated that the guard outside the tunnel detected smoke and reported this to Birka. However, Birka's Manager of Operations, Ingemar Karlsson, contends that Birka's staff called the Fire Department before it actually had first-hand reports of smoke (Karlsson, 2001c).

<sup>35</sup> The President, for instance read his at 9:00 a.m. He then contacted the Chairman of the Board, Carl Cederschiöld as well as Birka's Finnish partners (Karlsson, 2001b).

<sup>36</sup> Branger reached the tunnel after the power was cut, which occurred at 9:27 a.m. (Karlsson, 2002).

mission (Svensson, 2001).<sup>37</sup> At this time, however, the operation was still not a rescue service mission per se, since officially the operation had not escalated. This was still deemed an “ordinary” fire.

The Stockholm Fire Department responded to the challenge by putting the organization on higher alert (SBF, 2001:6). Mats Tollkvist’s team was the first to arrive, and Tollkvist made the operational decision to send firefighters into the tunnel to fight the fire at close range. However, the situation required firefighters to contemplate different options before beginning to fight the fire. In general, it can be said that fires in tunnels are complicated because it is difficult to determine the risks posed by the build-up of smoke and to predict the direction of the fire and fumes. The Rescue Commander must assess the situation, which includes an overall calculation of the risks that will be taken by the rescue force (Bergqvist, 2000:4).

When the Senior Station Officer on operational duties at the Stockholm Johannes Fire Station, Lars Hedström, was called upon to coordinate the departments involved at Akalla, he was enjoying a coffee break with Rescue Commander Göran Svensson. Hedström, who used to work at the Kista Fire Department, knew very well that the tunnels were narrow and that they stored high power cables. Hedström and Svensson saw the potential contingency in the situation and acted upon it. In unison they decided to send out both command vehicles (the Rescue Commander’s and the Fire Chief’s). Had they stuck to regulations, one vehicle would have been enough but experience told them that fires in tunnels are complicated matters. Essentially, what distinguishes a fire in a tunnel from an ordinary fire is the route of incursion. An ordinary fire in an apartment, for instance, has a route of five meters while a fire in a tunnel has an entrance route that is considerably longer. In the words of Göran Svensson: “Fifty meters is damn far to go in as a firefighter. If you approach 70 to 100 meters you’re doing something that is not done every day in Sweden” (Svensson, 2001).

On the way to the reported fire location, Svensson and Hedström were redirected to the initial site. After more information materialized, however, they decided to ignore the order and drive toward the second fire location where the build-up of smoke was more intense. Because of the uncertainty involved in the primary stages of the fire,

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<sup>37</sup> A level of management between Station Officer and Duty Rescue Commander.

Svensson decided to call on a backup unit to meet the fire before he reached the tunnel. When Svensson reached the tunnel, his first action was to establish a command position that was not in the immediate vicinity of the fire. Svensson and Hedström then approached the tunnel to grasp what was happening. Svensson decided that Hedström would be incident commander and that he would be Rescue Commander. In the meantime, firefighters from Kista and Vällingby, led by sector commander Jan Spångberg, were pulling out hoses and preparing to extinguish the fire. At this point, Mats Tollkvist was Rescue Commander, but as soon as Svensson reached Tollkvist, Svensson assumed official command.<sup>38</sup>

The firefighters had no prior knowledge of how the tunnel was structured. As with any emergency situation, however, firefighters are briefed so that when the time comes, they have a decent idea of what they are up against (Andersson, 2001c). This time, the firefighters were briefed among other things about the estimated size of the fire, smoke movement, the direction of the wind, and where the tunnel openings were located (Bergqvist et al, 2001). In addition, Birka had a liaison officer from Birka's contractor, Birka Service, on the scene and situation contingency reports were given to the staff in order to give them a clearer picture of the situation at the scene (SBF, 2001:18).

As Rescue Commander, Göran Svensson was the one responsible for the remainder of the operation. His job was to make calculations and to decide whether or not to continue fighting the fire by sending firefighters into the narrow tunnel. The situation was highly uncertain, and it was imperative that the Rescue Commander obtain contact with someone aware of exactly what was going on. Svensson approached people from the security company, Svensk Bevakningstjänst, who had been alerted by a detector that had gone off 300 meters inside the tunnel. Still, it was not safe to assume that the fire was in the same place, since the detector was the only one in the system. Moreover, the detector was located at the intersection of the three legs of the tunnel, which were 300, 1,500 and 500 meters long, respectively. It was therefore difficult to know which leg the smoke was coming from. The only thing that was certain was that there was

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<sup>38</sup> Documentation of who is in charge of such efforts is crucial, particularly in emergencies that might have legal consequences (Svensson, 2001).

smoke in the tunnel and that no people were at risk. No one knew what was on fire or where the fire was located (Svensson, 2001).

What Svensson did know was that the tunnel supplied power to some thousands of people via 110 kV cables. This made the operation all the more sensitive for the firefighters. With their well being in mind, Svensson approached Birka's representatives to discuss the level of risk posed by the cables. He inquired into what the risks of electrical shock were, and if there were such risks, he stressed that he would withdraw the firefighters. Birka's representative explained that there was no danger whatsoever. It was possible that a cable might become exposed, but the system would short-circuit by itself in such an event (Svensson, 2001).<sup>39</sup> In Svensson's view, it was clear from the Rescue Commander to the incident commander and individual firefighter that there was no risk of electrocution. Nevertheless, Svensson wanted the power cut during the time the fire was actually to be extinguished. Göran Svensson repeated the discussion that took place:

We asked them what would happen if we cut the power. 'You ought to know,' they said. 'You'll cut the power for 80,000 people; you'll cut off all of Kista, all of Ericsson! You can't do it,' he says. Yeah, but that's not your decision to make, I said. That's my decision! [...] If I want the power cut, you cut the power (ibid.)!

According to Svensson, although the Birka team did not want the power cut, it retreated after heated discussion. Svensson stressed that he wanted the power cut in order to reassure concerned firefighters. He had noticed that the firefighters were uneasy about the cables. Svensson was the only one who had the mandate to make this decision, although people involved in the operation influenced him. It was a controversial decision but one that Svensson did not later regret. He could have acted even earlier, as he explains: "One could've made it easy on oneself, and when we entered the tunnel we could've immediately told them to cut the power. But we didn't do this because we didn't know what was burning and how far inside" (Svensson, 2001). Although the Rescue Commander knew that there were

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<sup>39</sup> Svensson claims (2001) that an engineer represented Birka at the damage location. Karlsson (2001e) at Birka stresses that this engineer did not reach the tunnel until after the power was cut at 9:27 a.m. and that the only Birka employees there at the time were duty guards from the subsidiary company, Birka Service. Nonetheless and hardly surprising, the rescue service on location perceived the Birka Service team as appointed representatives of Birka.

no immediate risks involved in keeping the cables powered, he stressed to the service team the importance of disconnecting the power for the sake of the firefighters—to ease stress among them. It should also be noted that the Birka Service team had no authority to enter into a discussion on cutting the power or not. Birka Service is a contractor to Birka Energi in charge of maintenance of the tunnel. Authorization to push the button is vested in the engineer at Birka's command center. According to Birka's Manager of Operations, Ingemar Karlsson, the service team should have forwarded the question to the command center without hesitation (Karlsson, 2001e).

What, then, were Birka's considerations regarding the decision to disconnect the power? According to Ingemar Karlsson (2001c), Birka's operational managers were not entirely pleased with the way the matter was handled. Birka's engineer, Gunnar Branger, stressed that there was no risk of electrocution. Nevertheless, he and the Rescue Commander reached an agreement that Birka would cut the power as soon as firefighters had located the fire and were to begin extinguishing it. When the order reached Birka's command center, disconnection was instant. Afterwards Karlsson said, "If the Rescue Commander orders us to cut the power, irrespective of whether we think it's totally unnecessary and wrong, we do it and have the discussion afterwards" (*ibid.*).

It was an extremely difficult fire extinction mission. Despite demanding conditions, Svensson decided to continue sending firefighters into the tunnel (SBF, 2001:10). The firefighters faced a daunting task as they attempted to put out the fire. High voltage power cables were situated 300 meters into the tunnel, and working conditions for the firefighters were poor. It was a challenge for them to reach the site of the fire, since they had to slide 40–50 meters below ground and advance through 300 meters of smoke before they were able to reach the burning cables (Sörbring, 2001b). Thirty-five firefighters were involved in the operation, and once they were inside, vision was limited to half a meter (Andersson, 2001a). The smoke turned from gray to black, and within 17 minutes of the arrival of fire trucks, the Fire Department searched busily for new ways to tackle the fire. On two occasions, Fire Department commanders considered calling off the endeavor (Svensson, 2001). The first time, firefighters had advanced 100 meters into the tunnel without finding any clues as to the whereabouts of the fire (Almgren, 2001). The second time was critical,



since firefighters' efforts were not producing results. Svensson gives an account of how the discussions between the managers proceeded:

Then I tell the incident commander, 'be sure to keep the firefighters under control!' I'm not the least bit worried by the electricity or if the fire is spreading in the tunnel. What I'm anxious about is if something happens to the apparatus, if someone runs out of air. So then I say to Lasse [Lars Hedström the incident commander], 'be sure you have control over the equipment and the air. Be sure you have it under control so you can handle a panic situation 250 meters inside.' When they have progressed 200 meters Lasse says: 'Damn Göran, now their heads are hanging low. The operation isn't a success and pulling the hose is difficult.' Then I said, 'I'm coming down. We'll have to consider aborting the operation; trying some other way; entering from another direction' (Svensson, 2001).

By this time, the Fire Department had already instructed a second force to reach the fire from another direction. This second team was to move 1.2 km into the tunnel from the opposite direction, which meant that they would not encounter smoke all the way. Suddenly, however, conditions for the first team of firefighters improved, and Hedström, the incident commander, got a call from the firefighters that the smoke was clearing and that they were able to see the fire some 15 meters ahead.<sup>40</sup> Approximately 270 meters into the tunnel, firefighters met a two-way junction, and after a right-hand turn and an additional 30 meters walk, they encountered the fire. At this point, roughly 10 meters of cables were burning (Andersson, 2001a).<sup>41</sup>

Operational actors, i.e. those involved in on-site emergency management, who individually contemplated different options, marked this decision occasion. Though it should be noted that many players influenced the decisions, three crucial decisions—tackling the problem by sending firefighters into the tunnel, continuing to fight the fire with firefighters when efforts were not paying off and cutting the power—were made by the Rescue Commander himself. As it turned out, sending firefighters into the tunnel can be characterized as a crucial decision, since it profoundly influenced the development of the

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<sup>40</sup> Two and a half hours had now passed since the first unit reached the Akalla tunnel, and following regulations, the fire department switched from code green to yellow (Svensson, 2001). Hornyak places the time of this switch to code yellow at 8:08 a.m. (2001:7).

<sup>41</sup> Hornyak (2001:8) states that the fire took place 330 meters inside the tunnel.

crisis. Had the decision not been taken, the blackout may well have lasted more than 37 hours.

### *6.3. The fire is out and so is the power*

When the fire was out, the true nature of the contingency became clearer. Basically, the Fire Department's work was done, and Birka's operational staff was once again in the driver's seat and was expected to report when power would be restored. Although the uncertainty of the situation made accurate assessments difficult, proactive societal crisis managers responded to the decision occasion by initiating crisis organization.

According to the four criteria stipulated in the Rescue Service Law, rescue services were completed. Göran Svensson handed over authority to Lars Hedström, who would serve as Rescue Commander until the mission ended. The Fire Department staff dispersed, and the premises were handed over to Birka. Svensson, who was exhausted after the events of the morning, left the tunnel at 11:45 a.m. with the fire extinguished and the situation under control (Svensson, 2001). At Johannes Fire Station, there was discussion about what would happen next. According to Göran Svensson, when the Fire Department handed over the premises to Birka, Fire Chief Lars Hallander said to him: "80,000 without power. It's going to be chaos here tonight. People are going to be calling us like mad" (ibid.). Since rescue services had been called off and the level of staff preparedness had normalized, Fire Chief Hallander went home to get some rest. Hallander did not focus on what was occurring in the districts at this time. In Hallander's words:

Normally our work is based on the Rescue Service Law and we are responsible for municipal rescue services. When these are completed, and there is no reason to believe that there is more to come—as was the case when we completed the mission—then I let go of the old situation and get ready to focus on the next event that might occur (Hallander, 2002).

Before the power was cut, Birka's command center had received indications that the 33 kV cables were non-operational. As far as Birka's decision-makers were concerned, they had three disconnected and damaged 33 kV cables feeding Tensta, and repair of these cables

could be done in-house. Of the three 110 kV cables, only one had given any indication of failure, which left Birka with the hope and even the assumption that the remaining two were still intact and would be easy to reconnect. Birka prepared a statement estimating when power would be restored. Engineer Folke Lundberg, whose normal tasks included estimating the time span of outages and issuing information on power disturbances, was called in as stipulated in Birka's contingency plan. Around 10:30 a.m., Lundberg approached Birka's Manager of Operations, Ingemar Karlsson, to verify his estimation of the duration of the outage (Karlsson, 2001d). Karlsson agreed with Lundberg's assessment, and Birka consequently issued an overly optimistic statement at 11:00 a.m., which declared that power would be restored at 10:00 p.m. Later, Ingemar Karlsson acknowledged that Birka did not have sufficient information to make such a statement. In the first statement, there was no mention of any final damage report, although Karlsson knew that they would not know the true extent of the damage until Birka's inspectors concluded their on-site inspection at 3:00 p.m. Nonetheless, Karlsson and Lundberg felt compelled to release a public statement. Unfortunately, this view lacked sufficient foresight as well as caution. In this case, power had been deliberately cut, and there was no way of knowing if the cables were damaged, since Birka's command center only received indication of cable operability as long as the cables are powered. No such indication was available in cases where the cables had been damaged in a fire while disconnected (Karlsson, 2001c).

Despite uncertainty as to whether or not the fire had damaged all of the 110 kV cables, Birka ruled out the worst-case scenario. There was more to the uncertainty factor than the 110 kV cables. At the time, Karlsson had not yet received information from Birka Service, so no one had a real grasp of the situation in terms of the contractor's resources, i.e. personnel and material. In sum, operational actors at Birka had to estimate (*ibid.*). Karlsson describes the climate of thought at Birka leading up to the public announcement:

We thought that we had to do something and announce a forecast. At the time, we were under serious pressure to come up with a figure that was reliable, and since it was so extensive, it already felt like a challenge to step up and say 10:00 p.m., especially since it applied to such a large area (*ibid.*).

Before Birka's personnel were allowed to enter the tunnel, fire-fighters took pictures of it. According to the Rescue Commander, Göran Svensson, when Birka's people looked at the shots, they became deeply troubled. Judging from the pictures, it looked like the 110 kV cables were damaged as well. Up until the final extinction phase, the 110 kV cables had been running, so this development was unexpected (Svensson, 2001). Now, Birka's first priority was to assess the damage, but they would have to wait for experts' findings from a visual inspection of the site before an accurate assessment could be made.

Meanwhile, several stakeholders initiated crisis preparedness measures although they did not yet know whether the blackout would last throughout the night. At 10:30 a.m. on March 11, Kista's district director at the time, Luis Abascal, received a call informing him that there was a blackout, and he immediately headed for Husby Träff, a meeting place for residents.<sup>42</sup> In accordance with planning, he had the priorities straight. Due to their vulnerability, the group that needed to be addressed first during the blackout was the elderly. Public safety was priority number two (Abascal, 2001). At this stage, Abascal handled Kista DA's crisis response on his own. As half of Rinkeby still had power, things were not as hectic at Rinkeby DA. The manager for geriatric care issues in Rinkeby was at the office and decided that she had the situation under control. She made some adjustments, but decided not to activate the crisis plan (Demirel, 2001).

Corporations in the Kista area also began to respond to the situation. The telecommunications company, Ericsson, was totally without power and subsequently initiated its crisis organization. According to plan, the operations control center called Security Manager Stellan Svensson at 8:45 in the morning. Stellan Svensson was told that power would be restored in the evening, so he did not interpret the event as a real crisis and he did not assemble a crisis group at that time. However, in a preventive and strategic act, he notified several colleagues and told them to stand by in case the blackout became serious than first expected (Svensson, S., 2001).

DN's Distribution Manager, Sten Anderberg, heard about the blackout from Greger Kling, President of Bold Printing Group, at approximately 11:00 a.m. on Sunday. Anderberg was surprised because

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<sup>42</sup> Kista District Administration manages Husby Träff in cooperation with associations and voluntary organizations.

he knew that the printer had access to two feeding entrances specifically to protect the printer from power outages. But as it turned out both those feeding cables emerged into a single cable in the Akalla tunnel. Printing normally begins at 9:00 p.m., and with prior blackouts in mind, Anderberg assumed that power would resume in time to meet the printing schedule. The editor-in-chief and president of DN at the time, Joachim Berner, rushed off to work as soon as he heard about the blackout. Around 11:00 a.m., Berner went through the events with the news desk. Although Berner contacted Birka early on to ask them to draw power from another source and connect it to the printer (Arnborg, 2001), contacts between DN and Birka Energi were foremost managed by representatives of the printer, DNEX (Lundell, 2002).

Birka was the chief decision-maker in this decision occasion. Though extremely limited information was at hand for the dyad of operational Birka actors, it ruled out the unthinkable. Extremely stressful circumstances influenced Birka's dyad to release a statement with false information concerning when power would be restored. This, in turn, did more damage to the crisis management process than it did good, since the majority of local and municipal stakeholders consequently failed to recognize the severity of the contingency. However, actors such as Kista DA and Ericsson, who maintained a strategic perspective on the situation, managed to begin initial crisis organization.

#### ***6.4. The deadline will not be met***

This decision occasion was forced by the report given by ABB's experts after their inspection of the cable tunnel. When the extent of the damages became known, it was evident that the deadline declared in Birka's statement would not hold. It was now estimated that the blackout would last for more than two nights, a reassessment that set the contingency plans of many actors in motion. Birka's revised announcement and the activities of the press at this time sparked intense crisis organization among societal actors as they began to realize the potential impact of the blackout.

Now (at 2:30 p.m. on Sunday) there were no doubts that the initial time frame would not be met as all eight cables, including three 110 kV cables, needed to be repaired. Some 20 Birka employees were

employed to work on the problem, but since both the main and the backup cables were severely damaged, they were unable to make instant reconnections ([www.birkaenergi.se](http://www.birkaenergi.se)). This forced Birka to issue a new report with a more realistic deadline, which in turn increased the stakes, since missing a second deadline could prove devastating to the company's credibility. This called for a strategic decision on Birka's part, and an internal discussion at Birka followed, the end result of which was that the deadline was extended (Karlsson, 2001a; Johansson, 2001). Birka's second forecast, namely that power would be restored on March 13 at 10:00 p.m., was formulated after a dialogue between Ingemar Karlsson and the person at ABB High Voltage Cables responsible for the repair operation. Karlsson recalls that it was an "intensive dialogue" about resources, materials and the extent of the damages. Initially, ABB predicted that repairs would allow for power to be restored after four or perhaps even five days, but Karlsson would simply not accept this timeline and discussions continued. Later, Karlsson admitted that he may have put a lot of pressure on ABB's staff, but resources and costs were secondary matters at the time (Karlsson, 2001c).

Birka's second forecast also triggered the first gathering of the City's coordination group. The City's agencies understood that they were in the midst of a contingency and that they were required to come up with a crisis response. The Fire Department's Information Manager, Jan Haenel, set events in motion by calling Fire Chief Lars Hallander at his home. Hallander was told at this time that the blackout would last for two or three days, and that the County Board was preparing to take action. Hallander made his way back to Johannes Fire Station where he was briefed on the situation, and he began planning a response. Regulations limited the kinds of actions the Fire Department was able to take, although this kind of societal crisis was indeed an extraordinary event. The Stockholm Fire Department has a responsibility during rescue services and a responsibility during serious civil emergencies. The mission at hand did not fit under either of these categories. On the other hand, the blackout put a severe strain on society and thus presented a new kind of grey zone that gave the Fire Department the authority to act in this case (Hallander, 2002).

In accordance with contingency plans, Fire Chief Lars Hallander consulted with the City's chief civil servant, City Manager Jörgen Kleist, about establishing a coordination group consisting of actors

affected by the crisis. The group's first meeting would be held at the Center of Rescue Operations at Johannes Fire Station in Stockholm (SBF, 2001:6). Kleist was at home at 5:00 p.m. when Hallander called to notify him that they were facing a situation. They reasoned for a while about what actions would be appropriate to take and whether a coordination group ought to be assembled. Kleist told Hallander that he would give Hallander the go-ahead if Hallander decided a coordination group was necessary. Hallander replied that he would make some calls and get back to Hallander. Kleist then called Commissioner Carl Cederschiöld to inform him of the measures he and Hallander were about to take. Kleist then notified the City's Information Manager and headed for the Center of Rescue Operations at Johannes Fire Station (Kleist, 2001). In the meantime, the staff at Johannes Station was busy contacting the parties involved about the meeting.

There were no formal checklists or instructions for the mission, so Hallander had to turn to the minutes of the meeting that formed the basis for the Fire and Rescue Board's decision to give the mission to the Fire Department in the first place. Hallander also managed to squeeze in a meeting with Kleist before the first coordination gathering on Sunday evening at 8:00 p.m. (Hallander, 2002). Once the coordination meeting was called to order, the Fire Chief began by updating the group on the situation and informing them of the Fire Department's mandate to lead the coordination group (Kleist, 2001). The participants accepted this mandate, and Birka's Manager of Operations, Ingemar Karlsson, then took charge and informed the participants about the cable damages. Several briefings by involved parties, consensus on a number of decisions, and agreement on a new meeting time then followed. Participants at the meeting established a list of priorities, the most important of which were human life and safety followed by the preservation of economic property. Participants also agreed on prioritizing information efforts, heating shelters and extra police forces (Kleist, 2001). Another central issue at the meeting concerned the question of whether or not schools ought to remain open during the blackout. Some of the group members were of the opinion that the schools ought to be closed (Abascal, 2001). In the meantime, rumors had already spread that schools would be closed on Monday (SBF, 2001:14). In the end, the decision was left up to each District Administration and, after a great deal of delibera-

tion, the DA's reached a consensus and decided to keep the schools open (Demirel, 2001).

Participants at the meeting were also greatly concerned about the sorts of pre-emptive, large-scale measures that ought to be adopted in order to prevent crime during the blackout. General fears that criminals would start a crime spree after sundown had spread among the public as well as group members. In response, the police decided to call in extra personnel. At the coordination meeting, some actors wanted to bring in even more resources. Kista DA was a particularly vocal supporter of this position. There were indeed reasons to be alarmed—lights were out, most alarms were out of order<sup>43</sup> and undermanned district police forces faced a first night without power. The police had until nightfall to formulate and implement a proactive crisis response plan that would assuage fears of a night of crime and looting. According to the City Manager, the police employed all of the resources at its disposal (Kleist, 2001). In terms of protecting its own buildings, Kista DA responded by ordering security companies to patrol extra routes throughout the night and by setting up extra security around buildings and schools. During the night, there was no substantial increase in crime (Wohlfarth, 2002).

Two hours after the meeting, the core of the City's coordination group hosted a press conference for major local and national radio, TV, and print media. Fire Chief Lars Hallander headed the press conference, which featured representatives of Birka, the Fire Department, the City, the police, Stockholm Vatten, the various DA's and SOS. A result of the press conference was a sharp decrease in press inquiries and "unnecessary" calls to the emergency telephone number 112 (SBF, 2001:19; Persson, 2001b:3).

The second coordination meeting was held on Monday night at 1:00 a.m. At this meeting, the participants decided on a common information strategy whereby all information was to pass through the City's coordination group (SBF, 2001:33). When City Manager Jörgen Kleist left this second meeting at 3:00 a.m., he felt that the coordination group had the situation under control, despite a widespread sense of insecurity among the affected districts (Kleist, 2001). At the district level, the fact that the blackout was going to last longer prompted Rinkeby DA to activate its crisis plan. At the beginning of

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<sup>43</sup> Not all alarms were disabled. According to Securitas, their alarm installations remained function thanks to battery backup power (Löfberg, 2001).



the crisis response process, however, Rinkeby DA had difficulty finding a representative among its ranks who had a mandate to make decisions at the coordination meetings. Dag Jutfelt, Rinkeby's District Director, was on holiday abroad at the time. Nevertheless, a purchaser at the DA alerted him about the blackout on Sunday afternoon, and Jutfelt told the purchaser to contact Crisis Coordinator Maria Mannerholm and Sakir Demirel, Manager of Social Support and Disabled Care as well as former crisis group leader (Jutfelt, 2001).<sup>44</sup> Around 7:00 p.m. on Sunday, Sakir Demirel received a call from his colleague in charge of office facilities. In the Crisis Coordinator's absence, Demirel was asked to represent the District Director at the coordination group meeting at 8:00 p.m. Demirel set off for Johannes Fire Station, calling formal Crisis Coordinator Maria Mannerholm along the way to tell her to meet him at the fire station (Demirel, 2001). In the meantime, Jutfelt and Demirel spoke on the phone and agreed to activate Rinkeby DA's crisis and disaster group and appointed Demirel and Mannerholm to manage operations (Jutfelt, 2001). Both Jutfelt and Demirel felt that the situation was a bit more serious than first expected and agreed that Mannerholm and Demirel should lead the DA's work until Jutfelt returned. Once Mannerholm appeared, she would be the one formally in charge. This was in line with emergency planning, which stipulated that, starting from the top of the list, the one first notified was to assume responsibility until the crisis group was assembled (*ibid.*).

Later that evening, Rinkeby DA personnel gathered for their own crisis meeting. Demirel, Mannerholm and four additional key persons met. Despite the lack of power and telephones, the first meeting was held in the Rinkeby DA building as stipulated in the emergency plan (Demirel, 2001). Rinkeby School was the alternative meeting place, but it, too, was affected by the blackout. Around 3:00 a.m. on Monday morning, Jutfelt returned to Stockholm, and within a short time, he appeared at the DA building in Rinkeby. As more people began to show up at the office later that morning, Jutfelt took over operations by sending home Demirel and Mannerholm, who, according to Jutfelt, were pretty exhausted. Strictly speaking, Mannerholm was

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<sup>44</sup> Demirel's inclusion in the operation was due to the fact that he had the most experience in the field. Also, no one was able to get hold of the Crisis Coordinator, Maria Mannerholm. The crisis plan contained no clear provision stating that Demirel was to assume the role of District Director. However, due to his place in the DA management group, Demirel had a mandate to make decisions in the absence of the District Director, (Demirel, 2001; Jutfelt, 2001).

assigned to manage crises and disasters, but given the fact that it was, in Jutfelt's words, "such an extreme situation," Jutfelt assumed responsibility (Jutfelt, 2001). Since the Rinkeby DA building lacked power, Rinkeby DA was forced to improvise, setting up an alternative venue for the meeting at Bredby School. Here, several decisions were made, including sending out citizen guards to inform the public and to prevent crime. In an act of improvisation, cooking and sleeping facilities and an information center were to be established in Folkets Hus, because it was one of few buildings that still had power (Karlsen, 2001:2f.).

In line with pre-existing contingency plans, Spånga-Tensta District Administration established crisis management headquarters at Fristad's service building in Bromsten on March 11. There, a crisis group of 15 people manned round-the-clock was established some two hours after Birka released its second forecast (SBF, 2001:14; SPTF, 2001:5). Spånga-Tensta DA held its first information meeting on Monday at 7:30 a.m., and during the day, it opened three more sites in addition to Fristad's, all of which offered information, cooking facilities and aid. The municipality also implemented an emergency plan that involved calling in trained help employees to hand out blankets, candles and food to the elderly (STSF, 2001:2f.).

For Kista DA, a prolonged blackout set contingency plans in motion and called for crisis management in earnest (Casterud, 2001). In former District Director Abascal's opinion, however, Kista DA had already achieved emergency preparedness, and at the time of Birka's second forecast, the team had begun to normalize crisis management procedures, although efforts were then stepped up. Group members now knew how to disseminate information and they knew what advice to give people. When, at approximately 3:00 p.m. on March 11, Abascal received information that the blackout was going to last longer, he started to expand the Kista DA crisis group, contacting additional people to request that they participate in the meetings.<sup>45</sup> Around 4:30 p.m., Kista DA's Crisis Coordinator, Christer Wohlfarth, received a phone call from the Manager for Child and Youth Af-

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<sup>45</sup> It wasn't until very late, 7:00 p.m., that Social Services was contacted by the Police's Council Communication Center. Social Services is responsible for inspecting the scene of the emergency, and, if necessary, contacting the affected city districts to make sure that these districts activate their emergency plans. The duty officer at Social Services immediately began calling the affected DA's. As it turned out, Kista DA had already set its emergency plan in motion and was in the process of establishing a crisis center (Vallin, 2001).

fairs, Bengt Casterud, who had just finished speaking with Abascal on the phone. Casterud told Wohlfarth that Abascal wanted more DA personnel involved, so Wohlfarth ordered a taxi to take him directly to the meeting. By the time he reached Kista, it was almost nightfall. According to Wohlfarth:

It was like driving into a black wall. Then I understood that this was no ordinary blackout. I'd heard it on the news before I'd set off—that there was a big blackout in Kista—and when I saw that the lights were out at Ericsson, I understood that this was a big emergency (Wohlfarth, 2002).

At 11:00 p.m., Kista DA's crisis group, which initially consisted of three people, met for the first time.<sup>46</sup> Since the meeting took place on a Sunday, it was difficult to get hold of people (Abascal, 2001). After this first meeting, however, Abascal began actively recruiting more people for the crisis group.

Up until 3:30 p.m., Ericsson's Security Manager, Stellan Svensson, was able to handle the contingency by himself. However, when a colleague heard on the radio that the blackout was going to last and informed Svensson of this fact, Svensson knew that he needed to intensify crisis organization efforts. He responded by calling for a meeting of the Ericsson crisis group, the members of which he had notified earlier in the day.<sup>47</sup> As it turned out, however, the contact list was not very useful on a Sunday afternoon. It took approximately two hours before Svensson found enough people to help him handle the situation. Another major problem for Ericsson was deciding whether or not the staff should come into the office on Monday morning, since the offices were without power (Svensson, S., 2001) and the diesel-fuelled backup utility was not nearly powerful enough to manage a prolonged and serious power failure (Björling & Nilsson, 2001a). Ericsson decided to tell its 11,500 employees to remain home on Monday (Johansson, 2001). After this decision was made, the crisis group had to decide how to convey this news to all of its employees.

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<sup>46</sup> The group consisted of politician Magnus Haglund, a former military commander and representative of Moderaterna (the conservative party with a majority on the Kista District Board) as well as two civil servants, Abascal and Chief of Staff Angelika Björkbohm.

<sup>47</sup> Those invited were staff from the Information, Personnel and Health department (with the Health Department on stand-by). Security personnel from critical operations and the general manager from the largest of Ericsson's companies were also invited. A total of five-six people were called in for the meetings, which were held in the "War Room," a special office equipped with reserve generators.

By contacting the media, Ericsson was able to reach large numbers of employees. The team also decided to post a message on the website and to open the company switchboard. Despite these efforts, there were people that nevertheless turned up for work on Monday morning (Svensson, S., 2001).<sup>48</sup>

Ericsson was not the only company in the area to react. IBM's 2,000 employees were asked to stay home on Monday, although computers were running thanks to four diesel-powered backup units (Björling & Nilsson, 2001b). Taxi020, one of the largest taxi companies in Sweden, could neither be contacted by customers nor reach their drivers. Microsoft managed to keep up support work, but its remaining 350 employees were advised to stay home. Some companies managed to keep production going despite the blackout. The production of sensitive circuits at Ericsson Microelectronics was not affected by the blackout. Pan-European telecom operator Tele2 also managed to remain in operation due to backup generators, as did the transports and logistics company Schenker-BTL thanks to their switch to sufficient backup generators (Ahnland, Hedensjö & Swärd, 2001).

When employees involved in contingency management at the printers and papers were informed that the blackout would last longer than first announced, they began a search for external printers. Here, DN's crisis plans proved outmoded, dating from the time that DNEX was built in the early 1990s. Accordingly, the DNEX printer had no pre-existing plan to redirect printing (Holmkvist, 2001). SvD also had to improvise, since the paper had no agreements with other papers on back-up printing (Holmkvist, 2001). With recent experiences in mind, Metro was used to technical difficulties of this kind. As the paper had done before, it turned to Vestmanlands Läns Tidning (VLT) and Upsala Nya Tidning (UNT), which produced a somewhat smaller circulation than usual (Arnborg, 2001). In contrast, Aftonbladet turned to Norrköpings Tidningar and VLT (Palme, 2001), following an emergency scheme that entailed redirecting printing between different printing places. As for the printers, Tidningstryckarnas had no emergency preparedness for blackouts, apart from being assured by Birka that there were double feeds to the printer.

When the personnel at DN realized that the blackout would last and that they would not be able to print a newspaper in Akalla on

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<sup>48</sup> The blackout did not mean that Ericsson's 11,500 employees took the day off. The majority of employees worked at home or from other Ericsson offices in Stockholm (Svensson, S., 2001).

Sunday evening, things began to get hectic. Sten Anderberg, the Manager of Distribution and Printing, was working at home in the afternoon when Greger Kling, President of Bold Printing Group, called to tell him that it was uncertain whether power would be restored in the evening. They pondered about what action to take and decided that Kling should look for available printers. Soon after that, Anderberg decided to make his way towards the DN head office (Anderberg, 2002). When he reached the office he called the manager of transportation, Tommy Lundell, and said that DNEX would not have power that evening. Anderberg also informed about the ad hoc meeting that had been decided by the editor-in-chief, which he had been informed about earlier on. The purpose of the meeting was to give the involved divisions some time to solve their respective tasks and then to coordinate the efforts and inform the involved parties of what action each division had taken (Lundell, 2002). Before the meeting took place, Kling, had gotten hold of the production manager at Norrtelje Tidning's printer (NTP). The NTP had just recently built a new printer and could print its own paper at the old printer. So DN got access to the new printer. They also contacted their own local printer in Jönköping to inform its staff that it would have to print extra copies of the paper (Anderberg, 2002). DN called the NTP around 5:00 p.m. so the venture got started rather late, but within an hour, all key personnel were present (Arnborg, 2001). The main difficulty at the DN office was to get the news pages to the NTP. An employee at DN's computer division was called in to construct a new program that would allow DN to transfer the news pages to NTP in PDF-format. This delayed the process, but once the problem was solved, things ran rather smoothly (Anderberg, 2001).

The coordination meeting at DN took place at the news desk at 5:30 p.m. on Sunday. Then Editor-in-Chief and President of DN Joachim Berner chaired the meeting, and representatives of the production team, the distribution team and the news desk were all present. The divisions involved reported on their own areas, and a strategy for the evening was subsequently outlined (Lundell, 2002; Anderberg, 2002). The distribution and transportation staff informed the reporters about the situation and the new deadlines the reporters had to follow in order to make it possible to print a complete paper (Lundell, 2002).

Since the NTP was too small to handle the large number of trucks that distribute DN, the darkened packing room at the Akalla printer still worked as a base. The back-up emergency generators provided some light for doors and elevators (Lundell, 2002; Forsberg, 2002). Despite all efforts, DN had to reduce its regional distribution even though it managed to print 250,000 copies at the NTP. 25,000 additional copies were also printed in Jönköping (Palme, 2001). These were transported to Stockholm during the night (Berner, 2001). Despite these efforts, 90,000 subscribers in Stockholm did not receive DN on March 12. In addition, no copies were distributed in Dalarna, Gästrikland, Norrköping, Linköping and Gävle. In sum, DN failed to distribute 140,000 copies. Moreover, the NTP could only print 28 pages, whereas a DN normally contained about 40 pages on Mondays, so size of the paper had to be substantially reduced (Anderberg, 2002; Forsberg, 2002; Lundell, 2002).

The distribution for SvD, the second largest morning paper in Stockholm, was also affected. Improvising, SvD turned to UNT for emergency printing services, but technological problems thwarted the venture, and SvD did not manage to distribute a single paper in the area on March 12. According to then SvD Editor-in-Chief Hannu Olkinuora, SvD was too ambitious and tried to print a normal edition of SvD (Palme, 2001). As a result, only 790 copies were printed at UNT when the printer experienced a technical error. Since SvD had restricted time to print (UNT also had its own paper to print), there was no time left for SvD to finish printing by the time the error had been fixed (Arnborg, 2001).

In sum, a small group composed of Birka's operational actors decided to release a second statement on when power would be restored. While local societal actors responded by initiating a series of crisis management measures, the City Executive Office and the Fire Department responded by initiating discussions with a dyad of strategic actors, i.e. Kleist and Hallander. Kleist and Hallander then made the strategic decision to establish a coordination group consisting of an array of societal actors.

### *6.5. Who gets power and why?*

On the one hand, actions following responses to this decision occasion derived from Birka's recommendations about how to restore

power. On the other, such actions derived from the activities of municipal actors in possession of generators. This resulted in strategic decisions for many societal actors, among them Birka, the City Executive Office, the City Commissioner, the DA's and municipal housing companies. For one thing, a strategic decision had to be made regarding who was to receive access to the limited number of generators available. Service buildings for the elderly, daycare centers, schools and municipal buildings, all top priorities in existing emergency planning, were pitted against newspapers and big businesses. Meanwhile, the only social service in the area that was powered was the subway.

At the first city coordination group meeting, Birka's representative presented an idea that had been debated at the Birka head office. This idea involved rerouting power from the subway to restore rotating power to the districts. Birka had no obligation to deliberate this issue with municipal actors. On the contrary, Birka had permission to decide on the issue without bringing in the other societal actors. Birka management, however, believed that City management should have a say on the issue (Bruce, 2001). The subway company, Connex/SL,<sup>49</sup> was not keen on the idea and opposed the proposal as soon as it was put forth. However, the remaining group members thought that it was interesting enough to warrant further consideration. They then agreed to postpone the final decision until the next meeting, which gave City Manager Jörgen Kleist an opportunity to brief City Commissioner Carl Cederschiöld about the idea (Kleist, 2001). The question of rerouting power from the subway thus led to the only strategic decision that involved real upscaling to the City's elected political officials. The main reason for bringing the issue to the Commissioner's attention was the fact that the County Council is the authority responsible for the subway. City Hall's position would be stronger vis-à-vis the Council if it had the Commissioner on its side (Kleist, 2001). Despite efforts, Birka was unable to reach an agreement with Connex/SL on the issue, since the subway company did not want to share electrical power (Karlsson, 2001c). More importantly, though, other actors dismissed the idea. When Kleist reached Cederschiöld, it did not take long to settle the issue. In Kleist's words: "It took him three-

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<sup>49</sup> SL is a public company that plans Stockholm's public transportation. It is a part of AB Storstockholms Lokaltrafik, which is owned by the Stockholm County Council. Since July 1999, Connex is responsible for the running of the subway system ([www.sl.se](http://www.sl.se)). Connex Transport AB is part of the passenger transport group Connex, which is in turn a subsidiary of French-owned global media and communications company, Vivendi Environment ([www.connextransport.com](http://www.connextransport.com)).

hundredths of a second to realize that it was a stupid idea, and I had no opinion to the contrary.” Consequently, Cederschiöld, a high level strategic actor, was the one to make the main decision.

In Kleist’s view, cutting power to the subway would have increased feelings of isolation among the residents, since they would have been effectively “trapped” in their home districts. Moreover, Kleist contends that it would have delayed the actual repair work, since actors in the group might not have recognized the situation as acute if power were suddenly restored in certain areas. Weather conditions also played a role in Cederschiöld’s decision. The temperature was surprisingly warm, somewhere between four and seven degrees Celsius, and the Fire Department specifically contacted the Swedish Meteorological and Hydrological Institute to obtain an accurate weather forecast during the blackout. Had it been colder, Kleist and Cederschiöld might have made another decision (Kleist, 2001).

Not all stakeholders were content with the decision, however. Claes Tornérhielm of the Husby Center Business Association, who later handled a number of small businesses compensation cases against Birka, visited many storeowners in the area during the blackout. After the crisis was over, he found it disturbing that every means of providing power was not tried. In his opinion, any solution that would have restored power was a good solution. He also contends that the argument that people would have felt isolated is a poor argument: “Here people were primarily interested in solving the power supply problem rather than being able to travel” (Tornérhielm, 2001b). At the time of the blackout, the acting District Director of Rinkeby, Sakir Demirel, also supported the suggestion to reroute power from the subway. In his opinion, it was more important that the inhabitants had power than that the subway was running, particularly at night. Also, since alternative means of transportation would still have been available (buses, etc.), a functioning subway system was less vital. Since the proposal received little support, however, Demirel did not push for its implementation (Demirel, 2001).

Had Cederschiöld approved Birka’s proposal, it would have fallen to Birka to implement the prioritization of power supply. Had it been approved, Ingemar Karlsson, Birka’s Manager of Operations, claims that the proposal would have supplied electrical power to the DA’s or to whichever activities that rescue services advocated. Power would also have been routed to activities that Birka viewed as critical



to the functioning of society, for example, the printing presses. Tomas Bruce, Birka's Managing Director, negotiated with the City Manager and the Commissioner on the matter (Karlsson, 2001c).

It is interesting to note that Ericsson's Security Manager, Stellan Svensson, did not receive any information about the proposal on re-routing power from the subway. However, according to Svensson, the General Manager of Ericsson Radio Systems had contact with the Vice-President of Birka, who promised Ericsson high priority. Svensson stated that he "said that [he, the Vice-President] would do everything in his power to allow Ericsson to start operations again, maybe even at someone else's expense." It is unclear how this could have been achieved. True, Birka had a preferred customer system that meant that, during network failures, prioritized customers were able to receive power before the others (Dagens IT, 2001). But such lists of how power should be allocated were based on situations in which power was limited rather than power outages (Karlsson, 2001c).<sup>50</sup> During the blackout, the subway was the only major power source in the area, and at the time, Karlsson stressed that Birka could not possibly move customers to other power networks or alternative power sources (Sjöquist, 2001). As it turned out, then, Ericsson had to be content with hooking up diesel generators in the case of its most critical operations. This was an act of improvisation, achieved after discussions with Skanska, the owner of the office buildings (Svensson, S., 2001). One of the other major Birka clients in the area, DN's printer DNEX, received special treatment from Birka via a direct, first-hand information number to Birka's command center. DNEX had close contact with Birka throughout the crisis, according to the manager of transportation at DN, Tommy Lundell (2002).

It is up to the individual clients to make sure that they have access to alternative power sources if a blackout occurs, especially if the client acts in a field that is highly dependent on power. For Stockholm Vatten, for example, it is imperative to have access to generators. Power fuelled pump stations shut down when power is cut, and water cannot make its way up the pipes of high buildings. Thus, once power was disconnected in Akalla, circulating pumps to heat and ventilation stopped working, which affected freshwater and drains. In cases

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<sup>50</sup> The Commission on Vulnerability and Security has stressed the importance of prioritizing electricity users vital to the functioning of society when power is restricted during peacetime. In order for this vision to be realized, however, changes to the Constitution will have to be made (SOU 2001:41:174).

where the heating was working with the aid of backup power, circulating pumps were out of order, which meant that heating was not circulated upwards in the buildings (Haverdahl & Nilsson, 2001). In addition, three freshwater pump stations and one drainage pump station lost power. In accordance with preparedness plans, Stockholm Vatten was responsible for making them operational again. The solution was to connect mobile generators to the pump stations. This was not as easy a task as it may seem. Mobile generators are cumbersome constructions that have to be transported, one after the other, to the location of the facility. At Stockholm Vatten, the manager of the emergency staff was in charge of these operations and had a task force of four experts in their field to carry out the work (Persson, 2001a). Tommy Grönström was the manager on duty at Stockholm Vatten on March 11. At 12:00 noon, he received indication that one of the company's draining pumps in Spånga was failing. Two investigators reached the location at 1:00 p.m. and confirmed that all pumps had stopped. At this stage, Grönström contacted Birka and was informed of the details. He was then told that power would be restored within a few hours (Persson, 2001b). At 3:00 p.m. Grönström felt that he needed to be briefed about events, and since he had not heard anything from Birka, he called the company. Birka told him that power would be restored at 9:00 p.m. With responsibility for three failing water pumps, Grönström began preparing for the potential hook-up of mobile backup generators. The announcement that power would be restored on Tuesday evening reached Stockholm Vatten via SOS Alarm at 4:00 p.m., and Grönström's plans were subsequently put into motion. At approximately 5:00 p.m., Stockholm Vatten set up three places for freshwater in the affected area. However, apartments that were situated on the upper floors of tall buildings lacked water altogether (Persson, 2001b:2).

The Stockholm Vatten managers had more tasks at hand. Tomas Persson, the engineer at Stockholm Vatten, contacted City Manager Jörgen Kleist at 12:35 a.m. to notify him that all its facilities were now connected to generators, although the water pump station in Tensta only had limited capacity due to a weak generator (ibid:3). At 7:15 on Monday morning, roughly 24 hours after the blackout had begun, the first power backup unit was connected to the Tensta service home for the elderly and disabled (SBF, 2001:34). Two hours later, Tomas Persson asked the Manager of Operations at Stockholm

Vatten, Åke Jonsson, if the Fire Department and the City could borrow the three backup generators that Stockholm Vatten did not need, and Stockholm Vatten agreed (Persson, 2001b:3).

The housing company, Svenska Bostäder, also had to act in order to ensure that its services continued to function. On March 11 at 11:00 p.m., Svenska Bostäder's crisis group visited the company's houses for the elderly and decided not to connect these houses to backup power. According to the inspection group, although there was no heat, it was still relatively warm inside because the ventilation system was also down. Members of the group decided that they should hook the buildings up to backup heating in the morning, instead. They also ordered additional security forces to their facilities in the centers of the districts (SBF, 2001:33). On Monday morning at 7:15 a.m., the first generator was connected to a Svenska Bostäder elder care building and at 11:00 a.m., all five of the buildings were connected to backup heating (SB internal doc.). In line with Svenska Bostäder's emergency plan, the company decided at an early stage to focus its efforts on its geriatric care buildings. Svenska Bostäder had access to five generators that were connected to its geriatric care houses. The fact that the company had enough generators, though barely enough, was crucial because it meant that none of the buildings would need to be evacuated (Edholm, 2001a:2f.).<sup>51</sup>

On Sunday March 11, residents in blackout areas looked for ways to obtain information about what was going on. For public servants that happened to be at work, it was a hectic afternoon. Throughout the day, citizens gathered at Husby Träff, which became a spontaneous meeting place in Kista District despite the building's lack of power in the wake of the cable fire. Power was necessary, however, and Kista DA turned to Birka to request generators for Husby Träff. Birka was unable to supply these generators, but Husby Träff managed to obtain backup power from the bordering municipality of Sollentuna, despite the fact that emergency planning does not specifically mention such cooperation with other municipalities (Kista stadsdelsförvaltning, 2001). On the other hand, it is not specifically mentioned that Stockholm municipality must lend generators

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<sup>51</sup> Supplying buildings with backup power is in no way a simple matter. Residential buildings are normally not equipped for backup power connections, and comprehensive electrical work is needed in order to hook such buildings up to generators. According to SB, investigations of these arrangements will be undertaken in the future (Edholm, 2001a:2f.).

to its districts (Abascal, 2001). After the blackout, some controversy arose over the generator issue, even though Sollentuna had stepped in and provided Husby Träff with a backup generator (see section 7.6). Inside Husby Träff, Social Services, the DA's crisis group and volunteers held meetings, and citizens were able to receive information and food supplies (SBF, 2001:32).

The situation was not as acute as for Rinkeby DA as it was for Kista DA, since half of Rinkeby district had electricity. In addition, Rinkeby DA had access to two generators and did not need, therefore, to look elsewhere for additional generators (Demirel, 2001). Although District Director Dag Jutfelt claims that Rinkeby district had no acute need for additional generators, it is interesting to note that Rinkeby DA purchased a new and more powerful generator after the blackout (Jutfelt, 2001).

In short, many actors were pressed for ways to obtain generators in order to hook up critical utilities. The DA's of Rinkeby and Spånga-Tensta, whose districts were not entirely without power, had just enough generators to meet their needs. Kista DA, which lacked power altogether, was not so lucky. In turn, the possibility of rerouting power from the subway to the districts was abandoned after the Stockholm Commissioner—a strategic political actor—rejected the proposal.

### ***6.6. Two damaged cables can be temporarily repaired***

This decision occasion focuses on the question of what to prioritize—repairing the cables swiftly but tentatively or opting for a more long-term solution. If the temporary solution had failed, the whole operation would have been in jeopardy, and Birka would actually have been prolonging the blackout instead of shortening it. Despite the risk, Birka's operational managers opted for mending the cables the provisional way. Birka then issued a new press statement calling a press conference. Here, the prediction was that the blackout would last until 8:00 p.m. on March 12. Conflicting predictions were a natural result of the crisis management process: as more information came to light, statements and predictions became more accurate.

Temporary repair work was initiated as experts discovered that the outside layer on two 110 kV cables could be mended without re-

moving the cables from the tunnel. The ABB expert team, which included staff from ABB High Voltage Cables in Karlskrona, ABB in Stockholm and ABB Kabeldon in Alingsås (Gothnier, 2001) proceeded to peel off and replace the burnt substance on the cable least-damaged by the fire. Provided that it turned out successfully, the operation would mean that lights would be back on within six hours; a more permanent solution would have to wait. It was not certain that Birka would accept this idea. As Manager of Operations Ingemar Karlsson recalls, the decision was made after a difficult, long, and thorough discussion with Birka's contractor:

This was the situation: if it failed after we had backed it, then we would have to deal with it. Then, it would not be Monday evening at 8:00 p.m. instead of Tuesday evening at 10:00 p.m., but Wednesday evening at 10:00 p.m. or maybe even Thursday morning (Karlsson, 2001c).

Despite the risks, Karlsson decided to proceed with the provisional plan and informed the Birka crisis group about what was in store. There were no objections (*ibid.*). The temporary repair work meant that Birka had to budge from some restrictions by installing a cable that did not meet all of the standard criteria. It was estimated that the repairs would have a life span of a couple of years, and the cables were permanently repaired at a later stage (*ibid.*). Post-crisis, Thomas Gustafsson, Vice-President of Birka, admitted that they took a chance reconnecting power without having backup capacity. In the initial stage of the power restoration phase, the system depended solely on one power line, and if that power line were to break down, a new power outage would be a fact. The plan was to feed more power successively and thus reach normal voltage (Hellberg, 2001). Once power was restored on Tuesday morning March 13, Birka's network would be running without backup power. As the public began to turn on their appliances and technical systems, there was a risk of system overload. For this reason, Birka called a second press conference at 2:00 p.m. on Monday to inform the public about the latest stage of events. More local and national news media were present at this second conference. Birka declared its new forecast and made a preemptive attempt to inform the press about the risks involved in the venture, stressing that the public should use electricity with care due to limited capacity (Sterner, 2001:2). Given the risks involved, Birka re-

mained in a state of emergency preparedness (Haverdahl & Nilsson, 2001; Stockholms stad press release, 2001).

According to Kista's District Director, Luis Abascal, information from Birka about the temporary solution did not affect the crisis organization, which remained intact until power was restored (Abascal, 2001). Rinkeby DA also kept a high alert until the power supply was secured, which, according to the staff's beliefs, was around midnight (Jutfelt, 2001). At the same time the City's coordination group met again and the participants reckoned that the temporary repairs of the cable were successful. Hence, the meeting would be the last one (Kleist, 2001).

When the information about the temporary repairs reached DN, the team that was involved in making sure that a paper was published was working according to the ad hoc model that had been established the night before. Since it was not sure that the repairs would work and because Birka had told clients to use power carefully, DN continued to print the paper in the NTP and in Jönköping. The two printers in Akalla required so much power that DN could not get started immediately on Monday evening when power returned to the districts (Forsberg, 2002). As soon as it was clear that it was safe for the printer to start, DN cancelled about 100,000 copies in Jönköping and in the NTP and started printing in Akalla (Lundell, 2002).

Operational experts had a profound influence on the decision to go for the temporary solution. The discussions behind the decision took place in the small group setting, though Karlsson at Birka, an individual and operational actor, ultimately made the decision. The decision was critical for the crisis management and initiated the crisis de-escalation phase.

### ***6.7. Compensation demands are raised***

This decision occasion arose as private citizens and, not least, owners of small businesses realized the costs that the blackout imposed. As they reacted, Birka had to come up with a response. Already during the operational stages of the contingency, questions regarding compensation were put forth. Initially, Birka reacted to the demands by looking into the issue. After an introductory inquiry, Birka decided to wait and decide the issue on the supervisory group meeting on Thursday March 15 (Sterner, 2001:2).

In the immediate aftermath of the blackout, before the supervisory group meeting had taken place, Birka Nät representatives said in press reports that it would compensate customers' surplus costs caused by the blackout and that corporations were welcome to state their claims. But according to Birka's lawyers, for Birka to pay compensation to customers it had to be proved that the company had acted in grave negligence (Flores, 2001).<sup>52</sup> When it comes to businesses there are no specific laws to turn to. Hence, businesspersons have to prove that the power company has acted negligently. By adjourning the decision on compensation, Birka bought some time yet a final decision did not come any easier.

Shortly after the blackout, DN began to calculate the surplus costs. Ten thousand readers were left without a paper, some advertisements could not be published, and DN had to buy printing from the NTP and had extra transportation costs. At the time, DN and the printer DNEX considered demanding compensation from Birka Energi (Holmkvist, 2001). According to Anderberg (2002), the matter had not been decided as of February 2002. The financial manager at SvD, Carl Gyllfors, expected that insurance companies would cover the lion's share of the costs. Concerning the evening papers, Åke Halvdanson, technical manager at Expressen, estimated the paper's surplus costs for external printing and transport to a couple of million SEK. Expressen's blackout insurance only covered parts of the cost and its deductible was high, so therefore it planned to demand compensation from DNEX. Tidningstryckarna, which prints Aftonbladet and SvD, was partially insured against blackouts and planned to raise the issue of compensation with Birka Energi as soon as the costs had been determined (Holmkvist, 2001).

Concerning private citizens during blackouts, their losses, relating to frozen food that goes bad (but not refrigerated goods) and water damages, were generally covered by home insurance, although the insurance paragraph in question had a qualifying period of 48 hours (Mavi, 2001). Nonetheless, the insurance company Trygg Hansa decided to remunerate surplus costs for people that could not stay in their homes during the blackout (Andreasson, 2001). However, people in areas that to a large extent are populated by immigrants often tend not to have home insurance (Sandhammar, 2001). For this rea-

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<sup>52</sup> Chapter 11 of the Electricity Bill acknowledges the issue.

son 2,900 private citizen customers turned to Birka for compensation. According to the Birka managing director Tomas Bruce, the company granted 2,300 of the claimants the total sum of EUR 285,000 in compensation but decided not to compensate companies (Bruce, 2001). Ingemar Karlsson, Birka's manager of operations, explains the deliberations behind the decision:

We almost decided to issue information pledging to compensate customers. But we decided to go with existing laws. We were irrevocable and considered different options. What action would be most appropriate for customers? We decided that the effect of granting demands would not be satisfactory (Karlsson, 2001a).

At the end of the day, the Birka managing director, on behalf of the management, made the decision (Karlsson, 2001c). Despite Birka's decision on compensation, the issue was not brought to a close. Local storeowners who realized that a lot of goods had been damaged as soon as power was restored raised the issue at local Business Association meetings. Claes Tornérhielm of the Husby Center Business Association advised the storeowners to check with their insurance companies. Some two weeks later, it was plain to see that not all insurance companies had the obligation or the intention to pay since the blackout had not lasted for 48 hours. A couple of days later the ones that had not made an agreement with their insurance companies realized that they had to initiate a discussion with Birka as the responsible party. Tornérhielm brought the matter up to the DA's of Kista, Spånga-Tensta and Rinkeby. The Kista DA contacted the Birka company lawyer, Ronald Liljegren, who said that he would look into the issue. The storeowners then sent all complaints to Tornérhielm. Some 40 plaintiffs wished to continue, in order to press for compensation. Tornérhielm coordinated them and dispatched them to Birka's lawyer some 3–4 weeks after the blackout.<sup>53</sup> According to Tornérhielm, Birka seemed to have gone to great length to keep the dialogue at a minimum, which annoyed the business representatives. With six weeks passed since the power outage, Tornérhielm contacted the Birka lawyer on the telephone. According to Tornérhielm, Liljegren said that he knew nothing about the matter and if the plaintiffs had complaints, they would have to settle them in court. At this stage the business

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<sup>53</sup> The sum of the demands was 63,000 EUR.



association, the DA's and Svenska Bostäder took on a more visible role in the matter. Birka then replied that they had found the letter. Even so, there were no turnarounds regarding the actual case. Now the media also became aware of the matter and news pieces appeared in the major newspaper Dagens Nyheter, the local paper and Radio Stockholm. Nonetheless, the issue remained undecided.

Formally, there was an ongoing dialogue aimed at setting up a meeting to discuss the compensation issue between real estate companies such as Svenska Bostäder and Birka. But, so far, Birka has refused, according to Tornérhielm. City commissioner Alf T. Samuelsson was brought in to support the plaintiffs in an effort to give it some extra clout (Tornérhielm, 2001b).<sup>54</sup>

Birka's stance, then, is that the laws that determine whether or not compensation should be handed to victims (Birka Bildserie, 2001) speak in favor of the power company. Birka's Ingemar Karlsson admits that the company has lost good will among various customers, and that some customers have become extremely critical of the power provider (Karlsson, 2001c). Nonetheless, Birka has continued to stand by the decision not to pay these victims of the blackout. While Birka treats the issue as a legal one, Tornérhielm stresses that the issue is about business ethics (Tornérhielm, 2001b).

Birka responded to the decision occasion by involving strategic actors that deliberated the compensation issue in the small group setting. Although they may have known that avoiding compensating blackout victims would harm Birka's credibility, Birka managers opted not to settle for symbolic policies. Decision-makers in the management group decided to follow regulations and compensate private citizens but not companies.

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<sup>54</sup> At the time, Commissioner Samuelsson was in charge of issues of integration, environment and sports.

**Table 1: Presentation of decision occasions**

<b>Decision Occasion</b>	<b>Main Actor and Response</b>	<b>Main Decision Unit and Actor</b>	<b>Decision Level</b>
Cable failure	Birka: standard procedure, did reconections	Individual (Birka)	Operational
Tunnel fire	Fire Department (FD): sent in firefighters and cut power	Individual (FD)	Operational
Power is out	Birka: released flawed statement	Dyad (Birka)	Operational
Deadline not met	Birka: released new assessment. City Executive Office & FD: established coord. group	Small group (Birka) Dyad (CEO & FD)	Operational Strategic
Who gets power?	The City: No rerouting of subway power. Kista DA: Borrowed generators from municipalities	Individual/small group Small group	Strategic
Temporary repair?	Birka: Opted for temp. repair & issued new deadline. De-escalation	Small group/individual	Operational (experts)
Compensation	Birka: Paid individuals but not businesses	Small group	Strategic

## 7. Thematic Analysis

### 7.1. *Emergency preparedness and crisis mitigation*

The following section deals with the crisis managers' preparedness to respond to crisis. This is linked to the actors' experience of prior crises and the development of contingency plans. The capacity of crisis managers to identify possible threats and their ability to act to prevent them from escalating is also important in this respect (Sundelius & Stern, 2002).

#### 7.1.1. BIRKA'S PREPAREDNESS

Considering Birka's possibilities to mitigate or even prevent the crisis, the cable tunnel in question had been subjected to fire on prior occasions (Porne, 2001a).<sup>55</sup> According to Birka, the company had taken necessary precautions. The tunnel was equipped with automatic fire alert systems with smoke detectors, nine fire section walls and automatic door closers. Moreover, all the 11 kV and telecommunication cable connectors were fire-protected (Birka Bildserie, 2001).<sup>56</sup> Representatives of Birka have stressed that the cables may have been old, but they were still operational. The failed cable was constructed in the early 1970s and several layers of fine paper made up its insulation. The insulation might have deteriorated due to damp conditions, thermal aging and side effects from short circuits at earlier failures. According to Birka Nät's report of the blackout, the fact that the location slopes downwards could have lead to oil drainage of the cable (Östlund, 2001:1). It should also be noted that ignition took place in the joint between paper and plastic coatings, which is a result of the cost effective combination of old and new technology. The crucial emergency mitigation point, however, concerns the way the cables were placed. Backup cables were placed right next to main cables and a fire in the main cables therefore threatened the entire system. Once the main cable ignited the fire spread to the backup cable leaving few

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<sup>55</sup> In the Swedish daily newspaper, Svenska Dagbladet (Porne, 2001), it was stated that the second fire took place in 1996. According to Ingemar Karlsson at Birka, however, both fires took place in 1995 (Karlsson, 2001b).

<sup>56</sup> One might question the efficacy of this fire protection, since the 11 kV connector was suspected to be the cause of the fire. In addition, the real contingency happened because the fire spread to the 110kV cables, and, as far as Karlsson (2001d) knew, these were not fire-protected.

or no reconnection options. These shortcomings in organization and system design should not have been unknown to Birka.

Although a complex organization such as Birka may work hard to maintain safety and reliability, according to Scott D. Sagan, “accidents are a ‘normal’ result or an integral characteristic of a complex system. Serious accidents in hazardous organizations are rare but inevitable over time” (Sagan, 1993:28). Sagan also states that “it is the unlikely problem, even the bizarre and often banal failure, that initiates a normal failure” (ibid:34). The fact that Birka was aware of the likelihood of shortcomings in the paper/plastic connections, and that a “banal failure” such as a failed fire alarm exacerbated the cable fire reinforces Sagan’s theory. Now, these features differed in terms of coupling. No tangible verifications imply a correlation between the non-functioning fire alarm and the cable fire. The failure of the fire alarm seems to have occurred independently to the cable fire, which makes it what Charles Perrow calls, a loosely coupled event. The fire in the back-up cable, on the other hand, was dependent on the fire in the main cable, which turns it into a tight-coupled event. Though the network was redundant, supplied with a backup system as an alternative connection option, trivial and interacting incidents (Perrow, 1999:7–8) ended up in a contingency.

### 7.1.2. THE CITY’S MANAGEMENT AND COORDINATION SCHEMES

Two central crisis management principles were put to the test in Kista, i.e. the principle of conformity<sup>57</sup> and the principle of proximity. The former means that the normal organization and location of activities should as identical as possible when crises strike. The latter refers to the idea that crises should be managed at the lowest possible level in society (SOU 2001:41). Before the contingency escalated into a crisis, management had taken place on the local district level. The line organization within the DA’s remained intact as the district managers supervised the efforts. When the magnitude of the crisis was understood, the City’s newly developed emergency planning (“Management and Coordination of Measures during Severe Societal Strain”)

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<sup>57</sup> The principle of conformity is related to the principle of accountability, which suggests that parties normally accountable for a societal field should be accountable for that same field in times of war (SOU 2001:41).

was set in motion and put to the test for the first time (SBF, 2001:6). Notwithstanding the coordination efforts at Johannes Fire Station, the DA's crisis management groups remained assembled in the districts.

The origin of the City of Stockholm's coordination scheme can be found in the crisis preparedness plans for Y2K. While planning for Y2K, power outages were part of probable scenarios.<sup>58</sup> Among other things, plans were made to connect homes for the elderly to backup power from mobile generators in order to secure heating. Power failures were described as perilous for geriatric care and therefore prioritized in the scheme (BKB, 1999). In accordance with these emergency-planning updates, the City arranged for generators and made sure that hospitals had back-up power (Kleist, 2001). The recently improved preparedness plans were favorable for the management of the Kista crisis but despite the City's planned ability to provide back-up power, all generators were not utilized. Moreover, it took almost 24 hours before generators were installed. According to City Manager Jörgen Kleist, one conceivable factor might be that there were no established plans stipulating who should get access to the backup power resources listed at the fire station (Kleist, 2001).<sup>59</sup>

In accordance with the plan "Management and Coordination of Measures during Severe Societal Strain," responsibility for coordinating the City's resources was given to the Stockholm Fire Department and co-ordination took place at the Center of Rescue Operations at Johannes Fire Station in Stockholm (SBF, 2001:6). Thus, there was an established organization for action and information during crisis, even if the plan had never been put to the test—a fact that naturally led to some uncertainty in the initial stages. The coordinating work ran according to plan for most of the time, even though the Fire Department had limited prior experience of the coordinating task. One explanation might be past experiences from the turn of the millenium when a similar operation was put to the test. On New Year's Eve 1999, city management staff was present at Johannes Fire Station, expecting the unexpected. No emergency occurred at that time. According to many actors, however, the fact that this system of dialogue and

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<sup>58</sup> It has been stated that the Y2K threat was exaggerated and that general pre-millennium fears might have led to the Y2K issue getting such political attention (see Holmgren & Softa, 2001 for additional discussion). Interestingly enough the lavish spending and the many efforts put into security during the run up to the millenium was beneficial in the Kista case.

<sup>59</sup> This issue is elaborated further upon in section 7.6. "Bureaucratic Cooperation and Conflict."

a shared understanding of the need to cooperate had been established was critical to the positive outcome of the blackout more than a year later (Andersson, 2001b; SBF, 2001). The Fire Department had also conducted exercises on its coordinating role in case an emergency such as a blackout was to take place (SBF, 2001:21). On the negative side, according to the Fire Department's commission on the blackout, the coordinating and leading unit directed by the fire department had no prepared plans, such as checklists or arrangements, detailing its responsibilities during times of severe societal strain. Nearly all efforts were improvised, which was unnecessarily time consuming. In addition, there were no existing routines in the plans for major information efforts during a blackout (ibid:27). Of course, the blackout meant that most of the City's information apparatus was not functioning in the affected area. That there were no routines or schemes for these efforts only demonstrates that the involved actors never imagined that such an extensive power outage could take place.

### 7.1.3. DISTRICT LEVEL PREPAREDNESS

The district administrations all activated their contingency plans. Largely in accordance with these, they set up crisis centers, telephone information lines, spread informative leaflets and developed contacts with affected citizens. Notwithstanding the importance of these rapid reactions and direct efforts for the residents, management of the crisis was not flawless. Spånga-Tensta DA had a contingency plan that specifically entailed organization during a blackout (SBF, 2001:14). However, Rinkeby DA, which had its plan under revision during the crisis, was by no means prepared for a blackout of this extent (ibid:12). In a report of the events, Majlis Karlsen at Rinkeby DA has written that there was no functioning division of responsibility or detailed list of whom to contact (Karlsen, 2001:2). Even so, Rinkeby DA's crisis management group assembled on Sunday evening (SBF, 2001:12). There were some initial problems of getting hold of more seasoned leadership and personnel that had trained crisis scenarios. Rinkeby DA's crisis group had assembled and trained at prior occasions. The most serious incident was a fire in a residential building in Rinkeby eight years earlier that led to one fatality and several more people injured. According to the district director, Dag Jutfelt, the tragedy led to learning experiences, especially since the DA's crisis

group had practiced a scenario that was based on a large-scale fire in a building a year prior to the blaze. The crisis team thus learned routines for working models pertaining to division of responsibilities and the importance of gathering and coordinating information (Jutfelt, 2001).<sup>60</sup>

As did many municipal stakeholders, Kista DA followed the plans made out in the continuity planning that was established for Y2K. The plans emphasize around-the-clock activities such as houses for the elderly and disabled and they facilitated the work (Wohlfarth, 2002). The Kista DA may have had developed contingency plans, but a scenario including a blackout of these proportions had neither been planned for, nor been described in the schemes (SBF, 2001:13). In fact, all crisis scenarios had telephones as the principal crisis management tool (Casterud, 2001). Kista DA's communication problems were exacerbated by the fact that the City of Stockholm's telephone exchange, the 508 code, was out of order, despite guarantees prior to the millennium that it would always work regardless of the societal crisis at hand.<sup>61</sup> With the bulk of the telephone lines out of order, the DA only had one line open. It was impossible to make a call to the outside since concerned citizens kept calling in to the DA, blocking the only line that functioned.<sup>62</sup> On top of that, cellular phones only worked sporadically (Wohlfarth, 2002). So, frequently Kista DA had to improvise regarding what action to take. Kista DA activated its crisis plan but the venue of the meetings had to be changed from the council building to Husby Träff. The reason the district director, Luis Abascal, and his team decided on meeting in an alternative venue was that the first meeting room was on the tenth floor and since elevators were out of order, the group agreed that it would be better if they met on the ground level (Wohlfarth, 2002). In another act of improvisation, Kista DA established cooperation over municipal boundaries. The bordering municipalities Sollentuna and Järfälla helped with finding backup power for Husby Träff. On Sunday night of March 11, Sollentuna also opened its municipal hall to people in need (SBF,

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<sup>60</sup> It should be mentioned that crisis scenarios have not performed at Rinkeby DA since the fire (Jutfelt, 2001).

<sup>61</sup> This problem can be seen as the result of an ongoing trend, namely that owners of infrastructural networks, in an effort to prioritize cost-effectiveness, prefer to place cables fulfilling additional technical functions in pre-existing networks instead of creating new ones (Cf. Castenfors & Svedin, 2001:237; *Infrastrukturuppdraget*, 2000:28).

<sup>62</sup> Until 10:30 p.m., the phone was ringing off the hook (Wohlfarth, 2002).

2001:13).<sup>63</sup> This preparedness on the part of neighboring municipalities, which had no legal obligation to join in the crisis management, was valuable.

The housing company Svenska Bostäder had an emergency organization planned (ibid:21), but according to the administration manager, Tore Olsson, the company had no preparedness whatsoever for this specific event. The contingency plan was practically a list of telephone numbers—whom to call when something happens (Olsson, 2001). Of course, such plans are not much use when telephones are out of order and cellular phones are not working satisfactory. The other major housing company in the area, AB Familjebostäder also lacked contingency planning for blackouts (SBF, 2001:23). However, the housing arrangement in the area is rather unusual and it actually played a part in the crisis mitigation. Svenska Bostäder's representation in the area is substantial. At the time of the power outage, the company owned almost 9,000 apartments, a number of shopping centers and geriatric care buildings. This meant that the problem of getting hold of keys to blackouted buildings in order to check elevators for trapped people, which normally is one of the most serious problems during blackouts (cf. Newlove et al, 2000:70), was not such a big problem in Kista, as there were only a few housing companies to contact (Edholm, 2001b).

#### 7.1.4. THE FIRE DEPARTMENT'S PREPAREDNESS

In terms of operational efforts, the Fire Department was prepared for cable fires and similar events. However, it had only planned and trained for fires 100 meters into a tunnel; not 330 meters, as was the case in Kista. After the mission was completed, the debate at the Stockholm Fire Department revealed shortcomings in the fire department apparatus, especially concerning the equipment issue. It should be noted, however, that it seems a bit unrealistic to expect the fire department to be trained for this kind of extreme mission. In severe tunnel fires, it is not uncommon that fire departments opt not to send firefighters to fight the fire up-close, since smoke and extreme heat put the lives of firefighters in jeopardy. As documented in a prior

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<sup>63</sup> According to Kista DA's crisis coordinator, Christer Wohlfarth (2002) almost no one actually took shelter in Sollentuna.



CRISMART study on the fire at the Austrian ski resort, Kaprun, it took firefighters almost three hours to reach the location of the fire, and when they finally reached the train, it was all burned out (Larsson, 2001:20f.).

#### 7.1.5. FEARS OF A CRIME SPREE

A crucial crisis mitigation point regards public safety. In terms of fears of a crime spree, one wonders where these fears originated. One possible source could be analogies from the 1977 New York City blackout, when looting and destruction plagued the blackouted areas. In the case of the blackout in Auckland, New Zealand, in 1998, this knowledge served as a frame of reference as the police identified priorities (Newlove et al, 2000:73). It has been stressed by crisis management researchers that crime rates tend to fall during disasters but that, generally, the public does not believe this and therefore desires more police patrols for reassurance (ibid:74; Scanlon, 1998:41). Maybe, then, fears were exaggerated. According to Abascal, his team had New York 1977 in their minds, but they also acknowledged that New York and Stockholm are very different, so the analogy did not affect their judgement. Most likely, local experiences influenced these fears, the main reasons for which were the fact that there had been many break-ins in Kista, especially in schools and service buildings (Wohlfarth, 2002) and that the area had problems with teenage gangs roaming the streets at night. It was important that such activities did not escalate during the blackout.(Abascal, 2001).

The telecommunications company, Ericsson, also reacted by increasing security. This was achieved by employing a great number of additional security guards. According to the security manager Stellan Svensson, the security company “vacuumed the area for personnel, all the way from Västerås to Linköping, so there was a security guard on every corner.” No incidents involving Ericsson’s facilities were reported during the night. However, the additional security guards brought in from outside of Stockholm had very limited knowledge about the area and since it also was pitch black that was a problem (Svensson, S., 2001).

As it turned out, local police received reports on some 30 break-ins during the night. In comparison, about four or five burglaries take place on a regular night (Magnusson & Stomrud, 2001). However,

other sources tell a different story, namely that it turned out crime was just about as widespread as during any other night (Porne, 2001b) and that even though there were more alerts than an ordinary night, many of these were false alarms (Nilsson, 2001a). In comparison to the ice storm in Canada in 1998, there seems to be a pattern here. In Canada, crime levels actually dropped in the beginning of the disaster, only to reach “normal” levels later on. There was also a problem with false alarms in Canada. It turned out later that these were caused by the large number of people moving generators from one place to another, a situation that created mix-ups and false reports of theft (Scanlon: 1998:42f.). Whether or not the fears were exaggerated is not really salient in this study. Rather, it is the importance of actions, factual and symbolic, aimed at reassuring the public that should not be underestimated in the event of a crisis.

## *7.2. Problem perception and framing*

The way that stakeholders frame the problem is critical to their crisis response. Framing depends strongly on the subjective perceptions of the crisis managers, who are, in turn, influenced by cognitive and social structures as well as the developments at hand. The way a problem is framed deeply influences the actor’s range of choices, since these frames determine which problems are prioritized and which are neglected. Hence, once a problem is framed, potential options for action are heavily restricted (Sundelius & Stern, 2002). A recurring crisis pattern contains an initial and an altered problem perception. Crisis managers tend not to acknowledge the full scope of the problem at hand due to a number of factors, including heightened stress, uncertainty and time shortages. The initial problem definition may thus change as the crisis develops. Crisis responses will hinge on the initial framing, whether it is accurate or inaccurate. It is therefore naturally desirable that implicated actors frame the problem as accurately as possible from the start.

Framing is also linked to the question of who owns the problem. However, although the issue of ownership might be resolved thanks to existing emergency plans or ad hoc delegation during the crisis, the actor may still opt to “pass the buck.” Other actors may then take the initiative, even if they are not considered as actual owners of the problem.

### 7.2.1. FRAME SHIFTING

Uncertainty often permeates the critical questions of how the problem is framed in the initial stages of a crisis. As was the case in Auckland in 1998, the initial framing in Kista derived from the power company's perception that a major system failure was improbable (Newlove et al, 2000:115). When the 04.21 a.m. alarm went off at Birka, the problem was interpreted as a technical error rather than a fire. This framing, partly due to the fact that the fire alarm was out of order, also depended on Birka personnel's complete trust in the network system. Birka's watcher checked the system on two prior occasions the night of the fire without noticing that there was an emergency in the making. It was not until he returned for the third time and saw smoke coming out of the tunnel that the initial problem framing definitely changed from a technical error to a potential high risk problem. Now the perceptions of the problem were focused on the fire. The first priority was to put it out and the full scope of the blackout was not realized at this stage.

During the end of the firefighting phase, some of the cables in the tunnel broke down and some were deliberately disconnected so the northwestern suburbs of Stockholm were partly or completely without power. At this time Birka managers thought, or hoped, that it was simply a matter of doing some repairs and making the reconnection. The new perception of the problem focused on repairing the cables in order to put an end to the blackout, which may have entailed an extraordinary situation but not a full-fledged crisis. In their assessment of the problem, Birka managers presupposed that following extinction and repair work the system would be up and running come evening. Once the fire was out and Birka had seen pictures of the damaged 110 kV cables and especially after they received the go-ahead from the Fire Department to assess the damages, new problem perceptions relating to the blackout arose. It now became clear that damages were worse than first anticipated and that repair work would be much more complicated. Moreover, spare parts and expertise had to be sent from the south of Sweden, which meant that the initial time frame would not hold. This pushed decision-makers at Birka to establish a new problem frame that took into account a power outage of a couple of days. The first problem frame that actually acknowledged the scale of the blackout was thus produced, which in turn forced the remaining affected actors to follow suit and alter their

initial framing of the problem. All major crisis actors responded by initiating existing contingency plans.

When the ABB experts who had constructed the cables and had a service deal with Birka, found a way of temporarily repairing the damaged cables, this led to an additional shift in framing. The new assessment indicated that power would be restored in the evening. Problems that would emerge following a second night without power were thus avoided. As was the case in Auckland in 1998 and in Buenos Aires a year later, a final shift in framing occurred as victims turned the issue of economic compensation to the focal point (cf. Ulberg, 2001:35).

In analyzing the event, it can of course be stressed that valuable time was lost due to the first flawed declaration. Keep in mind however that the great uncertainty involved in the situation led to the flawed anticipation that power would be restored that same evening. Nonetheless, this anticipation led to decisions, or non-decisions. Once a decision is made it is difficult for the crisis management to change tracks. From the start, it was said that the blackout would not last for long. Many actors acted based on this declaration and adopted a wait-and-see approach to crisis management. Consequently, Birka's changing problem perceptions, and especially the second one, pacified many societal actors into not taking necessary steps towards crisis preparedness and mitigation. The decision to release the deeply flawed first assessment on damages and potential restoration was reached after dyad deliberations. It could have been avoided if Birka's crisis managers had tested the worst-case scenario strategy. Rather late in the process, it became clear that the blackout would last, and suddenly, heating and water supply became pressing issues. Water supply was restored and backup power generators connected on Monday morning March 12, the second day of the blackout.

### 7.2.2. FRAME DISCREPANCY

There appears to have been a major discrepancy between the way the affected district actors framed the problem and the way that high-level actors of the City did. Kista DA perceived the situation as a bona fide crisis. When interviewed, the former district director Luis Abascal described events in Kista as severe and extensive since "the whole IT industry came to a halt, which, in the end, affects people's health

and way of life” (Abascal, 2001). For the City Executive Office, the situation was not perceived as a full-scale crisis, although the plan in situations of severe societal strain was activated. Rather, it was seen as a serious incident. It was not severe enough to bring in a crisis management group consisting of politically designated managers (such as the City Commissioner, Carl Cederschiöld), but it was serious enough to call in the highest civil servant level (Kleist, 2001). Differences in the perceptions of stakeholders affected crisis management according to Abascal, who compares the crisis organization with a soccer team:

We could not face the situation with a team of eleven goalkeepers. We needed a team with a defense, a midfield, and attack that played on different levels of the crisis management. Here they sent squads of eleven goalkeepers from several sections of society (Abascal, 2001).

The framing discrepancy then led the City to take a relatively defensive wait-and-see approach while actors that had more at stake, for example, the districts and Birka, responded more actively. This is a classic phenomenon in the leadership and public administration literature, often referred to as the appreciative gap between center and field (c.f. Boin, 1998:29ff.). When this gap has been established, it is likely to be prolonged “by the resulting miscommunication and misunderstandings” (ibid:30). In the Kista case, issues concerning access to generators, military assistance, and crime prevention sustained the appreciative gap between Kista DA and the City’s leadership.<sup>64</sup>

### *7.3. Leadership*

This analytical theme deals with the different styles and types of leadership that crisis managers display. Among other things, leadership is decided by factors such as formal and informal power, political culture and organizational structure. Leadership can be individual or organizational. It can also be operational (technical-managerial) or symbolic (symbolic-political). Operational leadership is characterized by a predisposition to take charge of crisis management activities and coordination, while symbolic leadership style can be described as par-

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<sup>64</sup> This is elaborated upon in the section on cooperation and conflict.

icipation demonstrated through words and deeds that put on a show of participation and empathy. Leadership can also be personal in a concrete way or more distant, and leaders may dictate orders in a hierarchical fashion or provide for a more collegial structure (Stern & Sundelius, 2002). Finally, the way in which the leader delegates tasks in stressful situations is of interest when leadership is analyzed (Sundelius et al 1997:158).

### 7.3.1. THE FIRE DEPARTMENT'S LEADERSHIP

During the fire extinction phase, the leadership was concrete and formally regulated according to existing emergency planning regulations and the Rescue Service Law. The Rescue Commander, Göran Svensson, held command on-scene. He also displayed symbolic leadership. At a crucial stage during the fire extinction effort, when it was uncertain whether to continue or abort the mission, the Rescue Commander demonstrated symbolic leadership by making sure that not only firefighters' safety but also their comfort was prioritized. He put his foot down and ordered the Birka liaison officer to cut the power despite claims that there were no risks involved for the firefighters as far as the cables were concerned. When the fire was out, the Fire Department withdrew as the rescue service was completed. As owners of the tunnel, Birka was left to take over responsibility of the incident location.

When it was clear that the blackout would last, the Fire Department displayed operational leadership and took charge of the situation by returning to the hot seat, formally sharing the leading coordinating role with the City. According to contingency plans, the Fire Chief, Lars Hallander, undertook responsibility to contact the City Manager, Jörgen Kleist.

### 7.3.2. DUAL LEADERSHIP OF THE CITY'S CRISIS MANAGEMENT EFFORTS

Before the first city coordination meeting started, it was not decided who should actually lead the meetings. According to Hallander, Kleist asked if he thought that he should lead the meeting or not. Hallander suggested that he lead the meeting, but that Kleist be present, not least to stress to municipal representatives attending the meeting

the importance of sitting down together and working out a joint plan of action (Hallander, 2002). Kleist's role, then, was to authorize the municipal crisis effort and to legitimize it (Kleist, 2001). He thus assumed a rather distant leadership role. By keeping a low profile, Kleist let the local district actors reach consensus decisions. The Fire Chief carried out the operational leadership. Commissioned by Kleist he made sure that the task list was implemented (Andersson, 2001c). At the initial meeting and the following two,<sup>65</sup> Hallander held participants in check with his firm leadership style (Svensson, 2001), and the City Manager stayed in the background. Nonetheless, he was present at the meetings and had the authority to make overruling decisions (Almgren, 2001). According to Hallander, Kleist, by his sheer presence, could underline the importance of the meeting and the Fire Department's coordinating role. His other important task was to keep the political sphere updated. Hallander describes this division of labor in the quote below:

He was responsible for the normative and strategic decisions. I tried to hold the meeting together in order to make room for the strategic decisions that Jörgen [Kleist] ultimately had to make in consultation with politicians, because—and this we agreed on from the start—he was responsible for the political anchoring (Hallander, 2002).

According to Dag Jutfelt who participated in the third and fourth coordination meetings as Rinkeby District Director, there was no mistaking that the City Manager was ultimately in charge (Jutfelt, 2001). The City Executive Office via the City Manager then had the executive mandate while the Fire Department held the overall coordinating role. Since the Fire Department only had limited practice of strategic and coordinating leadership in times of crisis, complications could not be excluded as some 15 societal actors gathered at Johannes Fire Station for the first time. At this stage, it was essential to demonstrate firm leadership. Hallander describes the mood at the first meeting:

It was uneasy and many people raised questions concerning small details. They wanted answers to their little question. There my role was to structure the meeting so we could follow a certain order in report, analysis and swift decisions. It's not possible to discuss whether the elevator is not working for a person in some area when

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<sup>65</sup> The fire department has a system of shifting leadership. When Hallander's shift was completed, the new Duty Fire Chief, Bengt Wall, took over the chair.

we are talking about how the subway will run. One has to try to organize it (Hallander, 2002).

Hallander has stressed that he benefited from the Fire Department's experience of holding staff meetings. These meetings are operational meetings with fixed agendas and limited room for long-winded discussions. Following this routine, Hallander kept the meetings to approximately one hour by making room for short reports of the events, prompt analysis and swift new decisions. In Hallander's words: "It is a prioritization which I have learnt through the years; it's better to have a prompt decision in the right direction than a decision that takes a long time and ends up exactly right" (Hallander, 2002).

### 7.3.3. BIRKA'S LEADERSHIP

Local actors have criticized Birka for not showing concrete and personal leadership in the darkened districts. Svenska Bostäder's administration manager Tore Olsson has criticized Birka for being invisible to the victims of the blackout: "We didn't see Birka at all. Where was their local service? They should've been out here" (Olsson, 2001). As the person responsible for the compensation case Claes Tornérhielm recalled, the storeowners that he represented asked for Birka representatives at the time when things were in the air (Tornérhielm, 2001b). Put more concisely, the company showed operational leadership but lacked on the symbolic side. According to the critique, Birka focused most of its efforts on operational actions at the accident site. In terms of being visible to the general public it seems that Birka underestimated the importance of symbolic actions during crises. Of course Birka was forced to make some choices on what to prioritize and it seems that the local service was not one of those. It should be noted, however, that one reason for Birka to participate in the City's coordination group was to spread information through the group participants to the public. Moreover Birka sent the operations manager and the information manager, Christer Hilding and Thea Sterner respectively, to Husby Träff on at least one occasion in order to do televised interviews (Karlsson, 2001c).



#### 7.3.4. DISTRICT LEVEL LEADERSHIP

On the district level, the DA's were in charge. They are organizations of a pyramidal structure. At the top level, the District Director is responsible for the operation so, in the case of Kista DA, Abascal dictated orders and delegated tasks to his group. Abascal describes his leadership style as delegative with a high amount of trust placed in his staff. So, it was not simply a question of giving orders. On the contrary, a collegial dialogue signified Kista DA's work, according to the district director. Abascal participated at the first two coordination meetings at the Center of Rescue Operations at Johannes Fire Station but then he delegated the responsibility to his staff and displayed personal and symbolic leadership by staying in the blackouted area close to the affected people. According to Abascal, keeping the leadership close to the victims had an encouraging effect on the people. The Kista DA crisis group held the important crisis meetings in private. For the most time, however, the group members sat in the midst of the 'organized chaos' that was Husby Träff. When citizens approached the crisis management team, they asked if they could be of any assistance. Abascal and his team then assigned individual citizens with missions that relieved the crisis managers and at the same time, seemingly, calmed the inhabitants (Abascal, 2001).

Politically elected actors also took part in the crisis management via their roles as observers. At the end of the day, however, Abascal was the one who decided who was invited into the local decisional loop. Abascal may have delegated operational information gathering assignments, such as participation at the city coordination meetings, but he had no plans to delegate real influence to the politically designated observers, as the following quote shows:

I made it clear to them at an early stage that there is no double command in this assignment. I am the highest civil servant in the district and I have crisis management responsibility. Therefore, I am in command (ibid.).

The crisis leadership of Rinkeby DA was changed on a couple of occasions. Due to a coincidence, that the District Director was on holiday, and due to the hierarchical structure of the DA, Rinkeby DA had staff member Maria Mannerholm assigned to carry out operational leadership during crises. But because the district director, Dag Jutfelt, regarded the situation as acute, upon his return to Stockholm

on the second day of the blackout, he took the initiative. In the early stages, he sent home the staff that so far had been managing the crisis, i.e. Demirel and Mannerholm. It should be noted that it is risky to replace many leading managers at once because it might lead to a loss of continuity. Even so, unavoidable human constraints such as mental fatigue and stress can hamper the crisis organization (Flin et al, 1997). Such phenomena may also be increased during crises as stakeholders may find their presence vital to produce a favorable outcome and therefore refuse to take a break from the crisis management. Jutfelt knew that his acting managers had been working all night and, on Monday morning, he saw that they were very tired. Nevertheless, he had to tell them to go home on a number of occasions. Towards the end of the day, Jutfelt, too, felt tired as the following quote reveals:

Sooner or later, when you are exhausted, you commit errors and I felt that way late Monday evening. I had been awake for almost two days. I was so tired that I didn't have the stamina to engage myself in all the things that occurred. That's why I delegated the responsibility to participate in the last [city coordination] meeting (Jutfelt, 2001)

The revelation has led Jutfelt to act for further reform of the DA's crisis organization. He was inspired by the working model displayed by the Fire Department at the city coordination meetings during the blackout. The Fire Department staff worked in rotating shifts and showed great discipline in handing over responsibility. Jutfelt would like to incorporate such discipline into the DA's crisis management ranks, so that the leadership is replaced after ten hours (Jutfelt, 2001).

#### *7.4. Decision units and crisis organization*

Central to this theme is how and where decisions are made in institutional systems engaged in crisis management. Decision units can consist of anything from one individual or a small group to entire organizational networks. They may be located at local, regional, national or supra national levels and play a strategic or operational role as the crisis escalates or de-escalates. Command of crisis management may shift from one decision unit to another, and such procedures commonly feature upscaling and downscaling in the politico-administrative system (Sundelius & Stern, 2002).

### 7.4.1. THE CITY'S COORDINATION GROUP

The City's coordination group was the central forum for coordinating Stockholm City's response to the Kista blackout. Here representatives of municipal and district organizations and agencies whose interests were at stake during the blackout made decisions. How, then, was this group assembled and who decided which actors should be included in or excluded from the loop? The City's contingency plan described what action should be taken and that the City Manager, the sub-city Manager (who could not participate at the Center of Rescue Operations due to illness), the Fire Chief and the City's Information Manager should participate. The remaining participants should be decided on the basis of the case in question. In this case, it was clear that the district directors had to be contacted. The Fire Department decided to call the Military Authority into the group, something that the City Executive Office was not involved in and did not object to (Kleist, 2001). Fire Chief Lars Hallander was largely responsible for the list of invitations to the coordination meetings, although he received some input from the station officers and Kleist. As Hallander came up with names, he instructed the station officers to make the contacts (Hallander, 2002).

The meetings of the City's coordination group involved around 15 organizations. Meetings took place on Sunday at 8:00 p.m., on Monday at 1:00 a.m., 10:00 a.m., 3:00 p.m. and at midnight. The composition of individual group members changed during the process (SBF, 2001:11) and it seems plausible that personnel involved felt that they could not attend all meetings.<sup>66</sup> Some members participated in the capacity of on-duty managers and once they were off duty, other staff members replaced them. Had the group been intact throughout the crisis it would possibly have given the meetings more continuity and made them more effective (See e.g. Edam, 2001:1; Kleist, 2001). It might also have improved the way in which information was spread in the districts (Kleist, 2001). On the other hand, replacing personnel during the process could have mitigated mental fatigue and helped crisis managers stay focused on the tasks at hand.

The City's coordination group was a newly institutionalized group. In general, the period of time that a group has been operating

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<sup>66</sup> It should be noted that the police were not represented at the meeting on Monday morning at 10:00 a.m. (Hallander, 2002).

tends to affect group deliberations. Ad hoc or newly institutionalized groups often lack established structures concerning norms, roles and status. This might lead to new group syndrome, which, in turn, can create a vacuum, which tends to lead to member uncertainty, dependence on leaders and coordination difficulties (Stern, 2001:64). Nevertheless, new group syndrome does not seem to have been an issue at the Center of Rescue Operations, despite the fact that several different organizational cultures and structures were involved and that there were no given roles for many participants. Plausible reasons might be the Fire Chief's experience of holding operational staff meeting which meant that he kept a tight grip over the agenda and prioritized keeping deliberations in check and pushing the agenda forward or the general knowledge among group members that the City Manager had the overall mandate to take the critical decisions.

The City's coordination group shared similarities with the ad hoc group meetings with central actors that were established following the blackout in Auckland in 1998. However, a major difference between the two structures must be noted. In the Auckland case, the meetings did not follow because of pre-existing emergency planning. Rather the power provider, Mercury Energy, initiated them (Newlove et al, 2000:123) and decided which actors to include in the loop (ibid:77). In Kista, in contrast, the group was formed in accordance with existing contingency planning and the structures had even been practiced at a prior occasion. Furthermore, the Fire Department invited the different actors, which led to a major distinction between the two groups. In the Auckland case business organizations were allowed to participate in the meetings (ibid.). This was not the case in Kista. This is interesting for a number of reasons. When interviewed, Claes Tornérhielm (2001b) of the Husby Center Business Association complained that the clients he represented felt left out of the information chain. Moreover, the security manager at Ericsson, Stellan Svensson, said that he would gladly have attended the meetings at the Center of Rescue Operations, had he only been invited. In fact Svensson was not even aware that the meetings took place (Svensson, S., 2001).

### 7.4.2. BIRKA'S DECISION UNITS

Birka's decision units are, of course, also of central interest. At an early stage in the crisis, Birka's employed staff was increased. Operations management along with the engineer post was strengthened and took care of the running of operations. Moreover, several managers were called in for duty.<sup>67</sup> Concurrently, the Birka Energi subsidiary, Birka Nät launched its emergency preparedness plan, which led to the group executive board being called in. A crisis management group, encompassing the information and operations managers, was also established (Birka Bildserie, 2001). According to the contingency plan, the manager of operations (Ingemar Karlsson) was assigned to deal with information matters and overall coordination. At the first meeting, the group activated Birka Energi's general preparedness plan (Karlsson, 2001c). It then assembled regularly to coordinate and discuss the events and to make decisions on the internal division of labor and internal and external information efforts. Decisions were also made relating to coming endeavors, including follow-up information work (Birka Bildserie, 2001). These meetings were held on Sunday afternoons. The core of the group consisted of four people, but was sometimes extended to include additional participants (Sterner, 2001:1).<sup>68</sup>

### 7.5. *Value conflicts*

As noted in the introduction to this report, when crises occur, values are at stake. These have a tendency to clash when the pressure mounts on decision-makers. These clashes, or value conflicts, can be characterized as either painful choices or stress-inducing dilemmas. The way that actors cope with these varies considerably. Common patterns include ignoring, accepting, procrastinating or actively and constructively resolving the value conflicts (Sundelius & Stern, 2002).

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<sup>67</sup> Those summoned included Birka Nät drift Region Stockholm, Birka Värme's entire management and the Information Manager, Thea Sterner, who initiated information plans.

<sup>68</sup> In this case, the core of the group consisted of Ingemar Karlsson, Manager of Operations Stockholm; the Operations Manager at Birka Nät; the owner of the facility, represented by Vice President Thomas Gustafsson; Thea Sterner, the Manager of Information; Birka Värme's Manager of Information, and on certain occasions, the president of Birka Värme.

### 7.5.1. THE FIRE DEPARTMENT: VALUE CONFLICTS

In the case of Kista, a value conflict appeared as early as the fire extinction phase, when the safety of the firefighters was pitted against the need to control societal damage. In their effort to put out the fire, firefighters at the Akalla tunnel took a risk entering the tunnel. Taking risks might seem a part of the firefighter profession. Nevertheless, the value conflict was apparent, since the fire was particularly difficult to reach. Firefighters may be up to taking risks when it comes to saving human lives, but it is not routine when it is cables inside a tunnel that need to be rescued. The Fire Department and its staff are used to working under high pressure and intense conditions. It seems likely that organizational norms, to some extent, led actors to ignore this value conflict in the most acute phase of the contingency. After the operation, however, an internal discussion concerning occupational health issues emerged at the Fire Department. The matter of discussion was whether the risks taken by individual firefighters during the operational fire extinction stage had been too large to take (Andersson, 2001a).

In addition to the dangerous setting, there were a number of shortcomings in the Fire Department's organization. Radio communication was not satisfactory for the firefighters, the distance between fire fighters and protection forces was too little (150 m), at times the supply of water was not sufficient, and personnel that did not fulfil firefighter status participated in the work (Hornyak, 2001:11). There also seemed to have been different interpretations concerning the actual danger of the operation (ibid:14). According to Göran Andersson (2001a) at the Stockholm Fire Department, it is plausible that, at least subconsciously the firefighters, as they approached the fire, might have feared that there was a risk of electrocution. In fact, the Rescue Commander was well aware that this was not the case. But to be on the safe side, the operational leadership told the firefighters not to go within half a meter of the cables, insulated or not. At the same time, Fire Department managers told the men that the cables were not dangerous. Some firefighters might have interpreted this in an ambiguous way (Svensson, 2001). Possibly, this is why some personnel at times perceived the threat as unreasonable and felt that they were paid no heed to by the management in this regard (Hornyak, 2001: 14).

### 7.5.2. BIRKA: VALUE CONFLICTS

Birka's decision-makers worked hard to restore power within a reasonable amount of time. The priority to shorten the blackout meant that values were compromised. A value conflict arose between restoring power as soon as possible and worker safety, although the implicated actors may not have noticed it in the heat of the moment. The firefighters understood that the environment was hazardous, and naturally, they wore protective outfits. However, following fire extinction, the fire-stricken tunnel had to be cleaned up. In the midst of the crisis, it seems that information about the possible perils of working inside the tunnel was not stressed satisfactorily. Staff from, among others, Birka Service, ABB and Stockholm Vatten who worked in the tunnel after the fire did not take the necessary precautions. Birka Service employees wore rubber masks to inhibit inhalation of dangerous fumes, but the workers removed these masks after a couple of hours. After the fire, carcinogen substances such as dioxin and polycyclic aromatic hydrocarbons (PAH) were produced. Therefore, some forty Birka Service employees that worked long hours and even ate meals inside of the tunnel had to be tested for increased dioxin and PAH blood counts (ÖCB newsletter).

When the fire was out, Birka and external experts from ABB were naturally eager to enter the fire scene in order to make a rapid and accurate damage report. But they had to wait while the tunnel was being aired out and inspected. Once they were given access to the damage location by the Fire Department, ABB experts worked during Sunday night and Monday morning and came to the conclusion that it would not be necessary to cut the cables and piece them together again. They found a way to repair the insulation layers by replacing the damaged pieces of the cable one by one (Saving, 2001).<sup>69</sup> This created a value conflict because the decision required Birka to prioritize between repairing the system completely and restoring power as soon as possible. If opting to fix the system temporarily, the blackout would end before nightfall on March 12 whereas a thorough repair job would mean another night, or maybe two, without power. The downside to the decision was that the temporary solution led to a risk

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<sup>69</sup> In terms of the expertise required to restore power, Birka does not have its own expertise in this area. According to Ingemar Karlsson (2001c), it is not financially feasible for Birka to keep a spearhead staff such as the one at ABB.

of system overload when power was reconnected. Initiating large-scale information efforts and informing the public, particularly heavy power-consuming clients, about the risks involved in the temporary solution, actively solved the value conflict.

The most drawn-out value conflict in the Kista case began after power was restored and the scale of the damage became evident. Owners of food stores were badly affected by the blackout, since many frozen and refrigerated goods were ruined. Through the media, Birka made it clear that it would follow existing laws and not remunerate businesses for their financial losses. In terms of regulations set up by the insurance companies, the time span of the blackout was too short to activate compensation proposals,<sup>70</sup> and excess insurance compensated for a loss of 7,600 EUR — a considerable amount for troubled small businesses. Many owners of food stores nonetheless decided to take action against Birka and demanded compensation in the wake of the blackout (Mavi, 2001). The conflict between Birka and the owners of small businesses was prolonged, since no steps were taken to sort out differences between the two parties. When interviewed, Claes Tornérhielm, representative of the plaintiffs, expressed his feelings in the following way:

The storeowners think it is a question of unspeakable arrogance. They wonder if it is possible for a company to act like that. For them, it is a moral issue, and now they are considering the possibility of switching to another power provider. [...] Credibility is diminished. Their [Birka's] arrogance and sternness not only surprises the store owners, but also local politicians, district boards, civil servants and property owners. It has had a very bad effect on Birka throughout the entire district (Tornérhielm, 2001b).

Birka's initial procrastination did not make the value conflict easier to handle. Birka eventually accepted the problem and decided not to grant businesses compensation, despite the knowledge that the decision would probably produce ill will among local clients.

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<sup>70</sup> In March 2001, regulations stipulated that blackouts had to last for a minimum of 48 hours in order to activate compensation proposals.



### 7.5.3. REROUTING THE SUBWAY

While the municipal actors agreed that securing the safety of the old and the weak was the first priority, geriatric care buildings were without satisfactory power. In the meantime, SL/Connex was the only public source of power in the area. The idea to reconnect power from the subway to the districts created a dilemma that required making a choice between powering the subway and supplying power to the powerless districts. Had the subway been shut down, residents would have had fewer means of leaving the blackouted area. On the other hand, power in parts of the area would have been restored. At the end of the day, the decision was left to Commissioner Carl Cederschiöld. Accepting the value conflict and solving it via an upscaling effort kept potential bitterness to a minimum. The decision also meant that further value conflicts that would have been much harder to deal with were avoided. As the City chose not to redirect the subway company's power, it managed to prevent the actors involved from being confronted by a new and intricate value conflict, since the City's contingency plans were not clear on who would receive power when the power supply was limited. Had the City opted to redirect the power, its leadership would have faced a delicate task in deciding who would get access to power and why.

## 7.6. *Bureaucratic cooperation and conflict*

In many international crisis cases, consensus among actors is challenged, since the contingency raises the stakes for crisis managers. In cases of Swedish foreign policy crises, the alleged political culture of consensus-seeking makes this pattern less evident (see e.g. Sundelius et al 1997:150f.). Although Sweden has a political history of consensus and most of the deliberations that took place during the blackout were of a cooperative nature, disagreements among the stakeholders also appeared in the case of Kista.

### 7.6.1. STAKEHOLDERS AND EXPERTS

Cooperation between Birka and ABB experts was an important part of crisis mitigation. At the same time, studies of crisis should not downplay the fact that experts and decision-makers may well disagree very strongly about matters such as problem framing, the rele-

vance of particular data, and the assessment of suggestions to contain the crisis (Rosenthal & 't Hart, 1991:365–366). This was not the case in Kista, however, which might be explained by a common distinction between different expert categories, i.e. technical and socio-political (Newlove et al, 2000:141). The fact that the experts were technical and highly operational and that they interacted with operational units was beneficial for expert/decision-maker cooperation. The expert role here differed to a certain extent from the socio-political expert role that is common in crisis management. The socio-political expert role tends to be more directed towards strategic and counseling activities or tactical and intellectual information and assessments (Rosenthal & 't Hart, 1991:353). But the mere fact that the stakeholders and the experts are operational does not mean that the potential for conflict can be excluded. During the power outage in Buenos Aires, for instance, the power provider EDESUR blamed the constructor of the cables for the failure. This, in turn, cost EDESUR credibility as the public perceived the “blame game” as part of an attempt by EDESUR to avoid taking responsibility for its actions (Ullberg, 2001:56). Additional important factors that mitigated the potential for conflict between the experts and Birka’s decision-makers were that Birka had close supplier connections as well personal connections to the experts. The Site Manager at ABB had been Birka Manager of Operations Ingemar Karlsson’s neighbor for 20 years, which explains why there was no establishing phase in the relation and why it was easy for Karlsson to push the experts hard (Karlsson, 2001c).

#### 7.6.2. INFORMATION MONOPOLY

Throughout the crisis, Birka was the leading strategic actor, since it maintained control over the time schedule and was the essential source of crucial information throughout the crisis. Birka released the information that every crisis manager was dependent on in order to be able to make critical decisions and to implement these decisions. Power company monopoly of expertise was also evident in the case of Auckland. In that case, the monopoly seems to have unified the actors (Newlove et al, 2000:122). During the Kista blackout however, the fact that crisis stakeholders were, though grudgingly in some cas-

es, dependent on Birka's expertise and information monopoly created a potential incentive for conflict on at least one occasion.

When the fire extinction operation was completed, so was the rescue service task. The Fire Department then dismantled its increased organizational emergency preparedness and handed over authority to Birka, so it could get on with its investigation of the damages. At this stage, the actors were aware of the fact that power had been disconnected but no one understood the immensity of the problem. All actors shared an overwhelming sense of uncertainty regarding what time power would be restored and interpreted the situation far too optimistically. This delayed the City's coordination efforts and crisis response. The Fire Department was, naturally, dependent on information in order to be able to do its job. In Kista, the Fire Department acted in accordance with existing regulations when it pulled back after the extinction phase. Maybe this working model had become too deeply rooted. At the event of a similar incident in the future, the organization might contemplate not pulling back its entire staff even if extinction has been accomplished. After all, there was still a potential crisis situation unfolding, and had the Fire Department kept a strategic perspective of the events by monitoring them more carefully, this might have resulted in less time being lost in the initiating phase of the City's crisis response.

### 7.6.3. KNOWLEDGE GAP

In the case of Kista, Birka had all of the strategic information. When Birka understood that the blackout was going to last for more than a day, its personnel at the command center contacted the media and different municipal players within minutes. The Fire Department was not briefed, however. One wonders why Birka did not contact such a crucial player immediately. True, working conditions were uncertain and stressful, and it is possible that this vital piece of information slipped Birka's mind. Perhaps the company centered all of its attention on informing the mass media and therefore lapsed in getting out information to the most important and information-dependent party. Another possible explanation could be that working closely with the Fire Department throughout the morning, Birka might have believed that the Fire Department was well aware of what was going on in Kista. Or, as has been stressed by the Fire Department, perhaps Birka

was simply not aware of the Fire Department's coordinating role (SBF, 2001:2). This seems plausible and hardly unusual. Such knowledge gaps appear frequently in the case studies conducted by CRIS-MART. For instance, in the case of the murder of the Swedish Prime Minister Olof Palme in 1986, the police forgot to tell the military and the government about the events that had taken place. Instead, the military was informed by the military attaché in Washington, who in turn received the information from the BBC (Hansén, 2000:58; Hansén and Stern, 2001).

In this case, it might not have been a coincidence that the Fire Department was the crucial organization left out of the alarm chain. Fire brigades are seen as operational actors and are therefore often overlooked at the strategic levels of crisis management. Such bureaucratic non-contact was observed, for example, in the soccer tragedy at the Heysel Stadium in 1985. There, emergency services were excluded from, or simply not informed about, planning sessions that took place during the run-up to the game. This behavior was explained by the fact that Brussels had a new emergency plan that required a joint cooperation effort involving the police and the Fire Department, with a central role given to the latter. This arrangement, in turn, was contrary to the informal status hierarchy, at least as it was perceived by the police (Rosenthal, 't Hart & Kouzmin, 1991:20–21). Whatever the reason in the Kista case, valuable time was lost. Eventually, and haphazardly, the Fire Department's information manager, Jan Haenel, set the wheels in motion when he acknowledged that the situation was a potential contingency. Around 3:00 p.m. on the first day of the blackout, Haenel was enjoying the afternoon off in his home. He happened to be listening to a report on the radio and realized the potential immensity of the issue and therefore contacted Fire Chief Lars Hallander (Andersson, 2001a; 2001c; SBF, 2001:19). This non-conventional upscaling method was, of course, neither optimal nor time saving.

#### 7.6.4. CONSENSUS IN THE COORDINATION GROUP

The emergency services cooperated well, which is another common denominator between Kista and crisis cases in general (see e.g. Newlove et al, 2000:123). These actors, especially the Fire Department and the police, know one another well after repeated exercises to-

gether, and this has led to collegial cooperation efforts. The number of similar constraints and priorities that characterize their work also play a part (SBF, 2001:20). This may have enhanced the city coordination group's prospects for falling into new group caveats. In Kista, as in Auckland, there were different types of organizations involved in the meetings: district administrations, private or semi-private corporations, government agencies, and operational forces. Thus, different organizational structures and cultures that could easily collide were brought together. As it turned out, cooperation reigned whereas conflict was kept to an absolute minimum in Kista. A decisive matter for the success or failure of the operation was whether the actors involved would accept the Fire Department's newly established coordinating role. At the initial city coordination meeting, the Fire Chief informed participants of the responsibility handed to his organization by the City, and all team actors accepted this role (*ibid.*).

It seems that consensus and focus on the main problems at hand characterized the coordination group's work. On a number of occasions, the main evaluation of the crisis (*i.e.* SBF, 2001) and the interviewees refer to the coordination group meetings as exceedingly consensual. In the words of the City Manager, Jörgen Kleist:

Decisions matured in the process. We never even came to a voting situation. [...] Everybody was pulling in the same direction. There were no fights over prestige. Everyone understood that the principal aim was to secure human lives, health and property and everyone realized what would happen in the media if we did not succeed (Kleist, 2001).

Following the reputed Swedish consensus fashion, cooperation rather than conflict signified the work of the group. According to almost all participants there was a positive atmosphere surrounding the meetings. There was an unspoken agreement to focus on the opportunities to make the very best out of the situation rather than focusing on problems (SBF, 2001:18). The fact that Birka was involved in the group led to a rapid solution of many problems and a quick response to many questions, which made it possible for the group to carry the discussion forward in an effective manner (*ibid.*:19). The group might not have had a given set of norms but members may still have pushed to attain perceived norms. However, there were no evident patterns of conformity in this case. Instead, the actors were grateful of the pos-

sibility to share information and learn from one another. According to e.g. the acting district director of Rinkeby during the initial phase of the blackout, Sakir Demirel, the meetings were essential for the positive outcome. When interviewed, he stressed that city coordination assured the district leadership that it was on the right track. By getting together in the group structure, it was clear for the involved parties that they were not alone in managing the contingency. It was also crucial that they felt that the high level management of the municipality reflected the issues and made decisions based upon group deliberations (Demirel, 2001).

#### 7.6.5. TENSIONS REACH THE SURFACE AT THE FIRE DEPARTMENT

While consensus reigned during the meetings, tensions arose in the aftermath of the blackout. For example, disagreements between the operational and strategic divisions at the Fire Department emerged. The discussion among firefighters focused on the danger of the fire extinction efforts. It has been stressed that owners of high-risk systems cannot expect the Fire Department to prioritize their systems before the safety of firefighters. Göran Andersson at the Fire Department, for instance, stresses that high-risk facility owners cannot assume that the Fire Department will send in its people to put out fires if other peoples' lives are not threatened. If a similar incident occurs in the future, firefighters might opt to let the fire burn out (Andersson, 2001c). Some have even questioned whether the events should have been characterized as rescue service in the first place. In the view of the Rescue Commander, most of the criticism came from divisions of the Fire Department that were not directly involved in the operation, although some of the involved firefighters had complaints (Svensson, 2001).

The Fire Department's internal report was critical of the operation. It questioned why firefighters were sent 330 meters into the tunnel (Hornyak, 2001:8). Though circumstances were hardly optimal, in the opinion of Rescue Commander Göran Svensson, the criticism is somewhat unfair since many parts of the operation worked well.<sup>71</sup>

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<sup>71</sup> Svensson was especially content with the leadership at all levels and that information on risk and security distances worked out well (Svensson, 2001).

Concerning issues of resources, however, he does acknowledge that the mission had flaws. Firefighters were left without water and there was a shortage of radios. On some occasions, there were not enough radios for all of the firefighters in the tunnel, and only 70–80 percent of the firefighters had radio coverage. Svensson put an end to this when it came to his attention (Svensson, 2001). Nevertheless, Svensson has deliberated on the situation following the operation. When interviewed, he reflected over the question of responsibility: “At the end of the day, the firefighters are their own safety representatives. If they feel like... No! We are not going any further... Such strong critique did not reach all the way back [to the Rescue Commander]” (Svensson, 2001).

#### 7.6.6. KISTA DA VS. THE CITY ON GENERATORS

Perhaps the most interesting conflict in the Kista case is the one between the city districts and the higher-level management of the City. Nearly all of the companies and organizations involved in the management of the blackout have emphasized the level of consensus found among them and that there were no major disagreements over what the goals of the mission were. Nevertheless, there appears to have been a difference between how the DA’s perceived the problem and how City Hall perceived it. This difference, in turn, seems to have led to conflicts, albeit modest ones, concerning the types of resources that could have been utilized. In terms of the City’s efforts, Kista DA’s Manager for Child and Youth Affairs, Bengt Casterud, has said; “We felt that we had to ask for municipal support. It was not offered” (Casterud, 2001). Other local actors shared this view.

Along the same lines, Kista DA has put forth critique that the DA felt that they had to turn to neighboring municipalities for help instead of the City. Kista’s former district director Abascal has explained that he and his team had expected greater assistance from the City although they were aware that this is not a given or mentioned in contingency plans (Abascal, 2001). The gist of the conflict concerned access to the City’s generators. Abascal has stressed that if more actors with expert insights into the matter had been invited to the City’s coordination group meetings, this conflict might never have appeared. The City Housing Manager and the Education Manager are examples of competence that Abascal would like to have

seen present. The latter since she has a lot of competence in issues concerning schools and education and since a significant decision was whether the schools should stay open on the second day of the power outage. She would also have been able to estimate whether other schools in the municipality could have organized meals for the schools that were affected by the blackout. Regarding the Housing Manager's non-presence, he may have been up-to-date on issues concerning the City's generators and infrastructure in general. According to Abascal, although the City Manager did a good job, he did not have the capability to do an inventory of the City's infrastructure (Abascal, 2001).

While generators were scarce, the Fire Department had access to generators that were not utilized, a fact that the Fire Chief has since contemplated:

Afterwards I can say, a bit self-critically, that I should have acted in a different way on this matter. Apparently, we have access to a couple of them [generators]. I should have been able to call in people that could handle them in a different way. But it never came to such an acute phase. Still, we should have prepared for it in a better way. We should have inventoried our resources in case it [the blackout] turned out to last longer (Hallander, 2002).

Järfälla and Sollentuna municipalities ended up lending generators to Kista DA. It seems odd that local district actors felt that it was easier to ask for assistance from a neighboring municipality than from the higher management of its own municipality. Collegial relations between civil servants in neighboring municipalities might be an explanation. Abascal has indicated that in relations with other municipalities, no actor takes on the role of "big brother." They are all on the same level and part of the same network. Communication between Kista DA and other DA's such as Järfälla and Sollentuna is uncomplicated and contacts are unassuming and collegial (Abascal, 2001). Private connections also played a role. Kista DA's Manager for Culture and Information, Ingvar Åhman-Eklund, handled Kista DA's contacts with Sollentuna. He is also a political delegate in Sollentuna municipality and is therefore thoroughly familiar with the organization. Åhman-Eklund approached the neighboring municipality to inquire into the matter of generators, even though, according to Kista DA's crisis coordinator, Christer Wohlfarth, it is implied that



employees working for the Stockholm municipality should not go to other municipalities for help. In the words of Wohlfarth (2002):

He approached them to see if they had any generators and they offered them to us. We were in a hurry and they could help. Moreover, we had no problems in reaching them. [...] When we were in this position, sitting here in the dark, we had no jealous guarding of special preserves. We considered what would be best for the citizens. We did not care from where the generator originated. The main point was that it worked.

The fundamental issue concerning the controversy between the municipality and Kista DA on the subject of generators lies in the fact that the City had generators that remained unused. Basically, the perspective of Kista DA personnel is that the City did not inform them about the possibility of access to these generators. In contrast, the City Manager argued that the DA had ample opportunity to report that they were in need of backup power during the coordination meetings. He specifically recalled that the Stockholm Vatten representative declared that they had generators, which could be distributed. The DA representatives then explained that they had the situation under control and that neighboring municipalities had supplied them with generators (Kleist, 2001). When interviewed, Abascal (2001) did not agree with this interpretation of the situation. Instead, he contended that even if the DA's did not specifically ask for generators, the City's representatives should have made the offer:

Service to elderly and schools is my job. I'm no expert on disasters. If the City does not approach me and say, "we have generators: do you want to borrow them?" are we supposed to be responsible for that? We, who have our hands full? Should we also do the inventory over infrastructural and logistic preparedness? We cannot manage this. They ought to say to us: "we have 300 schools in Stockholm that can help you with food. We have the City Executive Office and the housing office with 100 generators, which you can use." I cannot do that kind of inventory of logistics. The city should have made the infrastructure available to us.

It seems that the DA's were not fully equipped to manage such a severe societal crisis. The City's leadership, in the form of the City Executive Office and the Stockholm Fire Department, appears to have failed to distinguish the DA's worries and, consequently, it did

not reach the local actors' expectations concerning potential crisis mitigation. Two additional issues of controversy, which are studied in the following sections, support this contention.

#### 7.6.7. KISTA DA VS. THE CITY ON MILITARY ASSISTANCE

There was a disagreement between Kista DA and City Hall concerning the Home Guard and its ability to provide food to the residents of the areas without power. The district director at the time, Abascal, had been in contact with the Home Guard, which was awaiting his go-ahead (Abascal, 2002). However, an upscaling effort was required, since the decision was too general and comprehensive for Abascal to make by himself. For this reason, he had to follow instructions from the City Executive Office. At the first coordination group meeting, Abascal brought this issue to the attention of the City Manager, Jörgen Kleist. In the following quote, he describes his perception of the situation (Abascal, 2001):

The first evening, at 10:00 p.m., we are in need of the Home Guard's services—right here, right now, tonight, on the scene, because it is cold here. But this was not accepted, and I have everyone there as my witness. Apparently, they thought more about the cost than the people's welfare. [...] I would gladly have a budget deficit, but I cannot allow people's lives to be in jeopardy; have infants without food.

The Kista DA crisis management team in Husby Träff had also received information that the Home Guard was coming to the district on Monday morning to supply citizens with food.<sup>72</sup> This was the state of affairs throughout most of the night. Kista DA's crisis coordinator, Christer Wohlfarth, was also disappointed when he learned that the decision to send in the Home Guard had been revoked. Almost a year later, Wohlfarth remembered how he perceived the situation (2002):

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<sup>72</sup> While Abascal was at Johannes Fire Station, the Manager of Citizens and Families, Örjan Sundin, served as Operational Manager in Kista. During the night, the crisis group consisted of Sundin, Manager of Child and Youth Affairs, Bengt Casterud, the crisis coordinator, Christer Wohlfarth, and three social inspectors called in to assist and inform the public. The psychiatric personnel of the crisis group were called in on Monday morning and agreed to help out if help was requested (Wohlfarth, 2002).

Then this promise was revoked. We did not know why. The promise came from Johannes [the management of the cooperation group]. But they changed their minds during the night. As far as I know, they did not want to send uniformed personnel out here. If the citizens are bad at Swedish and had not been able to follow the events, since they didn't have access to TV, then they were worried that people would interpret it as it was a real crisis in Sweden. First no electricity; then a lot of military personnel. This was why it was revoked.

The argument that reached the local management level was that getting the military involved in managing the situation might have led people to interpret the situation as worse than it really was. This assumption also had some local support. At Rinkeby DA, where the situation was not as harsh as in Kista, the declaration of the City's leadership was accepted. The acting District Director of Rinkeby, Sakir Demirel, has stated that a main priority was avoiding any potential exaggeration of the event in the public's eyes (Demirel, 2001):

We didn't want to get efforts going that were out of proportion [...] to create an atmosphere of crisis here was not beneficial [...]. We didn't want people to think it was worse than it was. We wanted to wait and see. We thought it was too early to arrange for food for thousands of people.<sup>73</sup>

When the decision to postpone the Home Guard's services reached Abascal, he discussed the issue with the City Manager. Abascal did not get the response he had hoped for. According to Abascal, Kleist replied that the military might scare the people. Later Abascal rejected this proposal as ludicrous. In his opinion, people in Sweden are not afraid of the military: "On the contrary, Swedes show great respect to the defense. One must remember that our military has never showed themselves in warlike situations" (Abascal, 2001). When the Home Guard was belatedly called in, it distributed food on Monday evening, March 12, as well as the following morning. On the morning of March 13, hundreds of people gladly stood in line for their services outside Husby Träff. It seems, then, that people were not disturbed by the Home Guard's presence. According to Abascal (2001):

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<sup>73</sup> Had the blackout lasted longer, one cannot rule out the possibility that Rinkeby DA might have reconsidered and made use of the Home Guard's services (Jutfelt, 2001).

I respect his [Kleist's] way of thinking. But it is the wrong one. We are all in the same boat, and the military is a part of society. If they have the opportunity to help, they should help. We cannot be prejudiced in such a situation. You cannot manage a crisis with prejudice. The military is a part of Sweden's organization and thus it should be brought in during crises. We cannot manage a crisis on speculation based on prejudice.

The risk of frightening the people does not seem to have been the main reason behind postponing the Home Guard's services. The fact that the Home Guard wanted financial payment for its services (Kleist, 2001) delayed the decision. Negotiations on the matter were held between city management and the Central Military District. The Fire Department has cooperated with the Central Military District on a regular basis because it has overall responsibility over voluntary military organizations. According to Fire Chief Lars Hallander, he had a dialogue with the Military Authority during the night in which it was decided that the Home Guard would be able to serve coffee and meals in the districts on Monday morning. This dialogue ended in the small hours of the morning due to the status of the mission—it was not a rescue service mission *per se* (Hallander, 2002). Hallander has explained his way of reasoning as follows:

During the night I got a call that said that they could not arrange it because it was not a rescue mission. At the time, I didn't inquire into the matter. [...] They would assist us if it was a rescue mission and then it would be free of charge. But we had never discussed if we would pay for it or not. Maybe we [the City] could have paid. [...] We never discussed it and we let it go because the following discussions would have led to a delay, which would have put the gains out of play. But then we put forth the issue at the next meeting at 10 a.m. and made plans for the afternoon (*ibid.*, 2002).

On the whole, the Military Authority played a minor role during the contingency. However, it had access to resources that, if used, could have assisted the crisis managers. The Threat and Risk Bill (prop 1996/97:11) and the Defense Decision (FB 96/97) made it possible for the Military Authority to assist in severe situations in peacetime (cited in Christiansson, 1999:5). In such situations the Rescue Commander has a mandate to contact the Military Authority (*ibid.*:7). Arguably one could say that it would have been beneficial for the crisis management if the Military's resources had been employed to a great-

er extent than they were. Examples of such resources are generators, cooking facilities, surveillance and evacuation, and transportation organization (Wijkström, 2001). However, the military is only obligated to assist in contingencies that are bona fide rescue service missions.

According to Göran Andersson at the Stockholm Fire Department, the main reason for not bringing in the military en earnest was that Swedish law demands that as soon as the Military Authority's capacities are required, in a situation that is not designated as a rescue service operation, the military has to be fully compensated for its costs. In addition, there has to be a thorough investigation into alternative selling sources (Andersson, 2001c; Wijkström, 2001). A potential for conflict then arises as inert systems that must be followed by the actors could hamper the crisis mitigation. It might seem like the fact that the Fire Department approached the Military Authority even though there was not an actual rescue service mission according to the Rescue Service Law, was a sign that the city authorities did not have full control of the situation. But Göran Andersson (2001c) implies that the reason for the query was to assure preparedness for the future possibility that things got out of hand, e.g. if the blackout were to continue for three or four days. Military assistance then was not needed on the spot and it appears that the crisis management organization was on top of things and even managed to plan ahead and test possible scenarios.

#### 7.6.8. KISTA DA VS. THE CITY ON CRIME PREVENTION

According to former Kista District Director Luis Abascal, the City and Kista DA also diverged on the issue of the number of police units that should be deployed on Sunday night. In Abascal's opinion, there was a need for more police resources, but he felt that he did not get enough support on this issue. According to Abascal, costs might have played a part (Abascal, 2001). Of course, this could be debated. What is clear, however, is that private companies such as Ericsson employed extra security guards, as did Kista DA. Had it not been for these initiatives, it is plausible that there would have been more crime in the night. According to Ericsson's Security Manager, Stellan Svensson (2001), Ericsson had all its facilities under surveillance by extra security personnel. The situation was not as pressing for Rinkeby DA managers, since the district is not home to as many businesses as

Kista is. According to the acting District Director of Rinkeby, Sakir Demirel, there were enough police forces on the streets and during the night to prevent the occurrence of additional crimes (Demirel, 2001).

### *7.7. Cultural diversity*

The difficulties in building a multicultural society in which alternative ethnic identities do not hinder integration and participation in society have been a recurring theme in Swedish societal debate for many years. Only recently, we have seen the implications that these issues have on national crisis management. This is even more evident when the crisis takes place in an urban setting. Rosenthal et al (1994:125) concluded that “increasingly, major disruptions that occur in the City will affect ethnically diverse populations, confronting them [urban crisis managers] with the need for a differentiated approach [to crisis management].” Evidently, crises in multicultural societies demand different management than the type often prevalent in outdated plans and schemes. Precise actions and words are important, since the risk of misperception increases with the number of cultures involved. Credibility between authorities and victims is then at even greater risk. The impact of cultural diversity on crises in Sweden was especially evident in the case of the 1998 dance hall fire in Gothenburg. In this case, a lack of knowledge about different cultures, norms and customs within the municipal administration led to unnecessary misperceptions (Hagström & Sundelius, 2001:121f.).

The Kista blackout affected an area that is home to many people with different cultural backgrounds. In some respects, the specific cultural context meant that costs were minimized. For instance, actors on site stress that many people did not think that a 33-hour blackout was such a big problem, mainly because they had experienced such incidents before in their home countries (e.g. Tornérhielm, 2001a; Wohlfarth, 2002).<sup>74</sup> Another example is that small businesses called in families and friends to patrol their stores, helping people out at the same time as they were preventing theft (Tornérhielm, 2001a). Cultural specific features might have worked for the

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<sup>74</sup> It should be noted that in terms of crisis coping, the inhabitants in the affected area passed with flying colors. The atmosphere in Husby Träff and its vicinities has been described as positive throughout the crisis (see e.g. SBF, 2001).

better on some occasions, but its characteristics also exacerbated the crisis. The inhabitants, who derive from various troubled countries plagued by conflict, and especially the children from these environments, often suffer from trauma related to earlier events and are therefore particularly sensitive to extraordinary experiences such as blackouts. According to Bengt Casterud (2001), who is in charge of Child and Youth Affairs at Kista DA, the first reaction of such children is often to fear aggression.

#### 7.7.1. INFORMATION MANAGEMENT IN A MULTICULTURAL COMMUNITY

Linguistic problems emerged during the crisis and gave rise to some problems. There are vast numbers of languages spoken among the residents (USK, 2001). Information managers prioritized releasing rapid information, rather than translating it into different languages. Similar events took place during the 1998 ice storm in Eastern Canada. At the beginning of the crisis, news conferences were broadcast only in English, which upset the French minority. Complaints followed and statements were, from then on, made in French as well (Scanlon, 1998:18). After the 1998 dance hall fire in Gothenburg, the Swedish Broadcasting Corporation went through great length to make sure that the victims of the tragedy had access to information in their own language. The local radio station managed to send frequent news bulletins in six foreign languages by engaging municipal interpreters. (Hagström & Sundelius, 2001:119). In Kista, Radio Stockholm was one of the main sources of information. However, it lacked the organization to broadcast in other languages than Swedish (Sjökvist, 2001).

During the blackout, most crisis managers noticed the dilemma of choosing between releasing rapid information or information aimed at linguistic minorities. On the one hand fast and accurate information was an absolute priority. On the other hand, information had to reach all victims. Translating the statements on several different languages would of course be a time-consuming task. In addition, there is always a risk of information distortion when translating statements to different languages. According to City Manager Kleist, the City's information team and Jan Haenel, Information Manager at the Fire Department, discussed the dilemma and decided to go with releasing

information in “basic Swedish” (Kleist, 2001). This line of reasoning was also applied by the rescue service in the aftermath of the dance hall fire in Gothenburg. In order not to create misunderstandings, press conferences were held exclusively in Swedish and so were interviews, as far as it was possible. Nonetheless, print information was released in other languages and interpreters were organized (Hagström & Sundelius, 2001: 118).

In Kista, part of the reason for opting to release information in Swedish only was based on the DA’s access to employees that spoke many of the languages in question. What is more, the crisis managers were confident that the tight contacts between citizens in the area would bar people from information desertion (Arkel, 2001; Jutfelt, 2001). Of course, these information channels do not exclude the potential for information distortion. According to the acting District Director of Rinkeby, Sakir Demirel, the main point was that information was available for people and that personnel at the information center spoke several of the languages that are common in the area such as Turkish and Somali (Demirel, 2001). These alternative multilingual information sources then led Rinkeby DA not to prioritize releasing information in different languages. District Director Dag Jutfelt defends this prioritization (2001):

Everybody that does not work in Rinkeby always think that we should have information in a number of different languages. But it turns out that everybody can grasp the information in Swedish. I think that sometimes one underestimates people’s ability to grasp information during a crisis. Everybody can get information. [...] Everybody who lives here in Rinkeby can, via contacts, get information on his own languages. If we would use that strategy [of releasing information in other languages than Swedish] we would not inform in Spanish, Serbo-Croatian, Greek, and Tigrean, i.e. the big languages but in these 70 languages that only a few speak. And no one can deliver such information. We’ll never be able to do that. The large languages are no problem; rather it’s the small languages. Then it’s better to concentrate the information efforts on Swedish and make it clear and have many people delivering the information, and providing assistance to the people in finding contacts if they don’t understand. [...] I think one should focus more on getting the information out fast, than trying to find people that speak specific languages.



Nevertheless, downsides followed the decision to release information only in Swedish. Most importantly, information probably did not reach people who did not read or speak Swedish. Of course, in times of crisis it is hard to find the time or the expertise within city agencies to translate statements to several different languages. However, when crises are at hand, people strongly prefer to receive information in their mother tongue (Scanlon, 1998:75f.). Especially in a multicultural setting, this should be part of the crisis schemes. Similar problematics were solved in a more ingenious manner by the crisis management of another urban crisis that spanned over different language groups, namely the Bijlmer air disaster in 1992. In the aftermath of the air crash that destroyed a large number of flats in an Amsterdam suburb largely populated by immigrants, the victims were divided into “country teams.” From each country team, a representative was picked that would handle communication between the victims and the relief and care agencies (Rosenthal et al, 1994:64). As it turned out, in the Kista case, Kista DA was the only actor that succeeded in releasing information in different languages. This was achieved by sending out cars with loudspeakers that informed the public of events in the most important languages in the area—Farsi, Somali, and Eritrean. The idea was an act of pure improvisation on the part of Kista DA’s Director of Information, Ingvar Åhman-Eklund. Electronic means of communication were not working, and analogies from prior contingencies abroad and in Sweden were the inspiration behind the initiative (Abascal, 2001).

### **7.8. *Crisis communication***

The mass media has an essential role in shaping the outcome of the crisis and it often has the ability to either make or break implicated actors. The mass media give the public insight into the crisis management process, and the stance taken by the media also influences the public’s opinion of this management. There are variations in actors’ approaches to crisis communication. Stakeholders may take a proactive and open approach toward communication, or a defensive and closed stance. The former means maintaining the initiative over information and establishing friendly relations with the media, while the latter signifies a distant relation to the press. Stakeholders that adopt such a stance run the risk of antagonizing the media, which may cost

them their credibility. Crisis managers also need to steer clear of credibility traps, i.e. creating gaps between words and deeds as well as expectation and performance (Sundelius & Stern, 2002). Mass media can also become an actor in crisis management by working in favor of crisis mitigation (cf. Ullberg, 2001:42). Moreover, crisis communication is not a one-way street between decision-makers and the press. It is also important how the different stakeholders communicate with one another.

### 7.8.1. LAPSE IN THE CHAIN OF ALERT

By and large, the public as well as inter-organizational crisis communication worked well in Kista. Then again, there were some shortcomings. After the operational fire extinction was completed, there was a considerable lapse in the information chain and information about the damage did not reach the Fire Department in an optimal way. Thus, valuable time was lost, since the true character of the problem went unnoticed. The City's coordinating work could have been initiated immediately but was not. Communication between the operational rescue management, the Fire Department's inner duty leadership and Birka representatives lapsed, as too much emphasis was put on the physical damage and the larger perspective was lost (SBF, 2001:27). Instead, the City's coordination group was initiated because the Fire Department's information manager happened to be listening to the news. The Fire Department has concluded that Birka was not familiar with what role the Fire Department has in a contingency. Plausible as that may be, one might ask if the Fire Department's information to municipal companies, like Birka, prior to the blackout, had been sufficient. Furthermore, if the Fire Department had chosen to look beyond rescue service regulations and informed city actors about its responsibility and the events in a preventive effort, crisis organization could have begun more promptly.

Once the coordination group was established, communication between actors participating in the group worked accordingly. In terms of the group-establishing phase, the most common complaints concern the short notice given to actors before the first meeting. For example, the chain of alert between Birka, SOS, and personnel at the housing company Svenska Bostäder was insufficient in the housing company's mind. It took until 5:00 p.m. on the first day of the black-

out before Svenska Bostäder was contacted (SBF, 2001:22). The same goes for AB Familjebostäder (ibid:23) which was not informed initially about the Fire Department's role or the fact that crisis groups had been set up. This information reached the company via the news on Sunday night. The Military Authority was also informed at the last minute. Information about the coordination meeting reached the military 45 minutes before the meeting was supposed to start (ibid:25). Therefore, the Military Authority did not succeed in finding a person that could make it on time to the first coordination meeting (Wijkström, 2001). Notwithstanding the probability that routines can be improved, this critique lacks understanding of crisis management working styles. Admittedly, the Fire Department received belated alert of the contingency, and yet it managed to act appropriately. It was inevitable that other players would also have to react on short notice.

#### 7.8.2. PUBLIC INFORMATION EFFORTS

Since the Fire Department was in charge of the City's management and coordination during the crisis, it also played a key role as public informant. The Fire Department's evaluation report of the City's coordination during the blackout lists a number of shortcomings concerning information efforts. The report states that the Fire Department's information division was underdeveloped and that telephone information capacity was inadequate. The two information hotlines were placed under heavy pressure and were difficult to access for long periods. Furthermore, the Fire Department acknowledged that it lacked organized contacts and working methods for public information work. According to the report, luck and high quality staff explained the satisfactory outcome of the public information efforts. The fact that the City's information manager took part in the coordination group was also important since she had well established working routines and contacts for large-scale information efforts.<sup>75</sup> In the future, the Fire Department requires that a contingency plan for such communication be initiated (SBF, 2001:19–20). Thus, there seemed

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<sup>75</sup> After the meetings, City and Fire Department Information Managers synthesized the information and released it to the media (Persson, 2001:4).

to have been a feeling of inadequacy regarding large-scale information efforts at the Fire Department. This, in turn, demonstrates the problems of adopting new and unfamiliar roles in an organization. The transformation from a highly operational actor to a strategic one requires practice.

In spite of the aforementioned problems, efforts of public crisis communication were comprehensive in Kista. Rinkeby DA staff placed leaflets in letterboxes, and the Fire Department printed leaflets and circulated them with help of the housing companies and Connex/SL employees. Moreover, the Fire Department instructed Connex/SL to give out information through speakerphones in the subway stations. Nevertheless, information had difficulties reaching people who stayed in their apartments (*ibid.*). Once out of the buildings, it was easier to get access. The information hub for the residents was Husby Träff. Scores of people assembled there and Husby Träff was swamped with people asking for advice and information. The Kista DA's crisis group also met in Husby Träff. In an act of creativity, the crisis group decided to establish a center of operations, surrounded by people, in the heart of Husby Träff. Kista's District Director Luis Abascal has implied that his team understood the importance of reaching out to the residents and therefore decided to be available to them. In that way, they would not feel left out and they could attain first-hand information about what was going on. Although the main reason for meeting was to be able to function as a district managing unit and handle the crisis rather than to interact with the people, this working model made it possible to communicate directly to the residents and may have served to calm the public (Abascal, 2001).

### 7.8.3. THE MEDIA: CRISIS MITIGATOR AND COPER

The mass media, especially the local radio station, Radio Stockholm, was an important player in the management of the Kista blackout, particularly in its capacity as information-provider to the people (e.g. Kleist, 2001). Radio Stockholm did not limit itself to reporting about the blackout in its regular news bulletins. It released information about the blackout throughout the contingency in its more frequently featured traffic bulletins. True, in the absence of power, many people in the area could not access the radio. The ones that had access were

either supplied with batteries or car radios. Now, making it to a car could also be a problem since garages were locked, as their doors were power driven.

Nevertheless, in running bulletins, Radio Stockholm made announcements about when power would be restored and where people could go for help and further information (Sjökvist, 2001). Since the blackout took place on a Sunday, however, the local station could only supply information until 2:30 p.m.. Afterwards, it was up to Swedish Radio to inform the public. Radio Stockholm's office is also left unattended during the night and opens again at 4:30 a.m. (Randberg, 2002). This led to some problems according to Christer Wohlfarth, Kista DA's crisis coordinator, who worked at Husby Träff during the first night of the blackout. The DA had established an information chain that was truly working, and the fact that Radio Stockholm closed meant that DA personnel had to establish new contacts at the national radio office (Wohlfarth, 2002).

The media, most visibly Radio Stockholm, then took on a role as crisis player, and it is interesting to note that local radio broadcasting, if only indirectly, triggered the City's coordination efforts. It was after listening to Radio Stockholm that the Fire Department's Information Manager decided to call the Fire Chief, which led to the City's crisis response. Incidentally, the media also became crisis copers as distribution of the entire regional print press was in the air. The daily press is a vital societal function and it is important from a democratic perspective that newspapers reach the public on a daily basis. During the blackout, the role of the print press was even more important. Residents in the blackouted areas did not have access to TV or the Web. Those who were not provided with cellular phones and batteries also lacked access to telephones and the radio. For these people receiving the morning paper might have been the only source of reliable information. Rapid responses from the papers led to the situation where all papers except for SvD managed to reach the blackouted areas. DN's distributors, for instance, placed piles of papers, which had the blackout as the prime news piece, at strategic places and outside of many buildings in the affected districts (Lundell, 2002).

Given the seemingly important role that the media adopted, it was crucial that the media was kept informed about events. In the opinion of the City Executive Office and Birka, this was indeed the case. Press conferences were called, and press releases were issued via

fax, the radio and the Web.<sup>76</sup> Information could also be obtained via “municipal information,” the operator at City Hall and the City’s information hotline, “Ask City Hall.” All external media were updated as soon as the internal information channels were updated (SBF, 2001:11).

#### 7.8.4. BIRKA’S INFORMATION EFFORTS

If the public or the media were to pick a villain among the stakeholders, it was sure to be Birka, since the fire took place in its grid station and the damaged cables also belonged to the power provider. It was thus essential for Birka not to aggravate the media. Birka made sure that its information personnel cooperated with the media and other actors that were in need of first-hand information. The company sent three operation managers and three information and marketing managers to the media, most notably Radio Stockholm. In addition Birka sent two electric operations managers to the operations managers of large clients<sup>77</sup> and the network help-desk was in direct contact with the large clients. Birka held two press conferences, issued press statements, updated its web site on a number of occasions and set up a link from the City’s website to Birka’s (Birka Bildserie, 2001).

Although information generally seems to have reached key persons, there were actors that felt left out. Tomas Persson, engineer at Stockholm Vatten, has asserted that he wanted to establish direct contact with Birka during the first hours of the blackout, but that this never happened. The Stockholm Vatten team thus had to find information other ways (Persson, 2001a:4).

Birka acknowledged the importance of issuing an accurate prediction of how long the blackout would last. Nevertheless, the calculation was changed three times (SBF, 2001:16). Uncertainty was obviously a factor, which has already been stressed. Before Birka’s command center was ordered to cut the power, one of the three 110 kV cables had broken down. This was of course serious but, despite the fact that Birka had no way to monitor further cable damages, the personnel assumed that they had two reconnection possibilities left. The focus then was that all the 33 kV cables had given failure indications.

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<sup>76</sup> Information was posted on the City’s website, the Fire Department’s website, and Birka’s website.

<sup>77</sup> Birka did not send a representative to Ericsson (S. Svensson, 2001), a failure that seems odd given the extent to which the crisis affected the communications company.

In sum, this was all information that Birka had access to when it issued its first estimation on when power would be restored. The choice to make was the one between issuing any information at all or holding out until more facts had emerged in order to make a reliable assessment. Birka took a chance and released a first statement based on limited information about the circumstances. In fact, the statement did not even include a reservation that a definitive assessment would be released after the damage inspection. At this time, Birka made the mistake of ruling out the worst-case scenario. It was a stressful situation for Birka decision-makers, and the statement that power would be out until the evening was hard enough to make.

Following an expert inspection of the damages, it became clear that the initial time frame would not hold. Therefore, it was evident that Birka had released a promise that it would not be able to keep and that the choice to release a statement based on very little data was a mistake. A typical crisis manager credibility trap thus was created, which meant that it was imperative that the next statement became a realistic one. Missing two consecutive deadlines might have set up a credibility trap that would be hard to untangle. The case of the Buenos Aires blackout is a reminder of the importance of issuing accurate deadline statements. In Argentina, the responsible power company EDESUR managed to put itself in a real fix. Initially, EDESUR released a statement indicating that power would be restored within the day. When this was not achieved the company promised power within 48 hours. However, EDESUR could not deliver, and after the second broken promise people took to the streets in protest against the company. Needless to say, after additional missed deadlines and eleven days without power, the company's credibility was all but shattered (Ullberg, 2001:20f.).

When Birka's Manager of Operations, Ingemar Karlsson, was about to set up a new deadline, his concerns were first that the new statement would be accurate and second that it would be within an acceptable time frame. ABB's experts wanted the deadline to stretch even further, but after deliberations with Karlsson, they agreed on setting a deadline of Tuesday evening, March 13. As it turned out, this was an overly pessimistic deadline. Birka and the experts had taken for granted that they would have to replace all three 110 kV cables, although it turned out that only the outside layers were damaged on two of the 110 kV cables (Karlsson, 2001a; Birka Bildserie, 2001).

Although Birka's information efforts were comprehensive, its information staff chose a more cautious approach than did, for example, the power company Mercury in the Auckland case. Mercury opted to send out an array of press statements without assessing the reactions from the public (Newlove et al, 2000:90). Birka tried to synchronize most of its information and release it via separate press conferences. In Birka's view, the approach was not fully appreciated by the press (SBF, 2001:17). Along with Birka, the City's coordination group was a major public information source. Participants at the meetings found it crucial that public information was cohesive and that it emanated from the source most well-informed (Kleist, 2001). Therefore, they applied the same media strategy as Birka. At the first meeting the participants decided that all information should be released via the coordination group's press conferences, held after the meetings. The strategy was implemented without attracting the media's frustration. Media pressure was of course higher on the power company than on the remaining stakeholders. As Fire Chief Hallander (2002) said: "As a rescue service, we saw ourselves as hosts, not as victims." Birka, however, was neither host nor victim, but rather villain, which may have led Birka to find it rather problematic to apply a restricted media strategy.

### *7.9. Learning*

Learning focuses on the way actors analyze past experiences and draw on their findings as they implement changes. Historical analogies and lessons from past experiences may come into play during the management of a contingency. When the crisis is over new discoveries might, ideally, lead to revisions and the removing of flaws in working models and contingency plans. Generally, crises bring to the fore ample opportunities for learning, but various social and psychological dynamics tend to thwart implementation. Organizations have a tendency to prefer to give the picture of a well-functioning coordination and a coping management. Alternatively, actors in the wake of a contingency may speak of ambitious plans for future crisis mitigation but this is not a guarantee for actually putting the plans into effect (Sundelius & Stern, 2002).



### 7.9.1. LESSONS LEARNED AT BIRKA

The most apparent learning that occurred in the Kista case was evident as soon as the cause of the accident revealed itself. The Operations Manager at Birka, Christer Hilding, declared that main and backup cables placed close together in the Akalla tunnel would have to be separated (Haverdahl & Nilsson, 2001; Birka Bildserie, 2001). The Vice President of Birka Nät and Regional Director, Thomas Gustafsson, admitted that there were probably five more places in Stockholm constructed in the same fashion and assured that they would be attended to (Haverdahl & Nilsson, 2001). Such demands were also aired in the political arena. In the Vulnerability and Security Commission's report, for instance, three demands on owners of regional networks were suggested. The last demand was directly linked to this case and was therefore dubbed *Lex Kista*: "Within 10 years no backup cables for power supply should be located next to main cables" (SOU 2001:41:397). After the crisis, City Manager Jörgen Kleist discussed these issues with Birka's management. Ultimately, it is Birka's responsibility to follow up on the job of determining which other sections of its network are constructed in a similar fashion and what can be done in order to ensure that a blackout like the one in March 2001 does not happen again (Kleist, 2001). It is interesting to note that the City has sold its shares in Birka to the Finnish firm, Fortum, which might make it even more complicated for the municipality to monitor these developments.

Birka's lessons learned are expressed in short- and long-term goals. In the short term, the operation position of the 11 kV network will change so that disconnection at a similar occasion will be immediate. Orders have been issued to modify four network stations and this work was completed by the end of March 2001. The provisional connections that were made during the repair phase were still in service half a year later, but have now been permanently redone.<sup>78</sup> Moreover, card readers will be placed at the entrance of the tunnel for quicker access (Birka Bildserie, 2001). Lastly, a monitoring system to the fire alarm that indicates when the alarm is out of order will be installed (Karlsson, 2001c). In the long term, different alternatives concerning feeding of the area have been discussed. The most interesting

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<sup>78</sup> On September 12, 2001, Ingemar Karlsson of Birka said that the cable was being replaced (Karlsson, 2001a).

one is the option of connecting Hågerstalund network station directly to the national grid. However, connecting the cables to the 220 kV cables of the national grid will be a costly venture. In addition, a new production site > 50 MW (megawatt) should be set up in the area, and the 33 kV cable that currently runs underground in the tunnel will be separated (Birka Bildserie, 2001 and Karlsson, 2001b).

It has been noted by Birka as well as by the City Executive Office that the relatively satisfactory outcome of the power outage hinged, among other things, on the fact that ABB had experts ready to step in on short notice. Such coincidental events, which are usually referred to as synchronicities in the literature on crisis management, worked in a favorable way in Kista. ABB cable experts happened to be in Stockholm for a conference (Bruce, 2001) and, as it turned out, it was pure luck that additional ABB experts were available for Birka, since their expertise is in great demand all over the world (Kleist, 2001). After the blackout, Birka and ABB have examined their contract on certified special competence and ABB-Birka relations are expected to increase. For example, Birka and ABB staff will participate in annual training together in order to be able to cooperate more fully. The new contract will likely be more thorough and attendance requirements will be sharpened (Karlsson, 2001c).

The fact that the Akalla network tunnel is the only one of Birka's facilities to have experienced three cable fires led Birka to suspect that faults in the paper/plastic connectors were the reason behind these repeated fires. Normally, faults occur in the supplements, for instance in the connections between different cables, which was also what happened in the cable tunnel in Akalla. After the blackout, Birka pledged to investigate the possibility of undertaking a project to replace these paper/plastic connections. Prior fires did not damage the 110 kV cables (*ibid.*), which meant that incidents in the past did not have the same repercussions as the one in March 2001. In relation to system security, this was hardly the most important issue. Keep in mind that the fire did not originate in the 110 kV cables. Instead, the fire started in the less powerful cables and spread to the high-powered ones. With a functioning fire alarm and a more alert and critical posture on the reliability of Birka's system, the fire might have been stopped at an earlier stage. As it was, when the first failure indications appeared, operational actors were too optimistic in their interpretation of the events. The same pattern returned when an assess-

ment of when power would be restored was about to be released. Despite the knowledge that there were no ways of knowing for sure what the damages were, once power had been deliberately cut, a dyad of Birka operational actors released a much too rosy estimation of the probable duration of the blackout. Herein lies a potential for learning. A company that operates complex systems such as Birka should not trust its system too much.

Supervision of the premises is another issue that makes it more difficult to uphold a resilient system. There are many parties with an interest in the tunnel. Although to a certain extent Birka Energi owns the tunnel, Birka Nät, which owns the cables, is only a tenant. Recent changes in company formation mean that the tunnel has been bought. A government commissioned proposal released in June 2001 suggested that power companies should pay a fine to clients that are affected by outages that span from 12 to 24 hours. The amount of the fine would rise with the length of the blackout to a maximum sum of 639 EUR. Making it possible for clients to receive compensation for a loss of electrical power could constitute an incentive for the power companies to increase system security (Andersson, J., 2001:4). The proposal also stated that the companies should pay renovation of grids multilaterally through a foundation. The trade organization Svensk Energi, however, opposed both suggestions (Svt.se/nyheter, Jun. 6, 2001) and after further discussions the power companies, voluntarily, reached a separate agreement concerning compensation (Näringsdepartementet Press release, 2002). The agreement led Birka to make a pledge that, as from January 1, 2002, it will reduce the grid tariff by 25 percent, or at least EUR 21.7 for clients that experience blackouts that last for 24 hours. In the event of a power outage stretching over 72 hours the tariff will be entirely cut (Birka Press release 2001b). Regarding the issue of compensating victims, it is essential to remember the symbolic importance of the issue and the role that compensating victims might play in shortening the aftermath of the crisis. In the Buenos Aires case, lingering compensation claims added to a “social and political harsh climate” as well as extending the crisis for another month and a half until the power company changed its attitude towards the claimants (Ullberg, 2001:32).

### 7.9.2. LEARNING: THE FIRE DEPARTMENT

Learning is essential for the Fire Department, and its staff cannot afford not to learn from an incident. Therefore, it is not surprising that the Fire Department's interest in learning is evident in the case of Kista. The Senior Station Officer on operational duties and the Rescue Commander made good use of the Senior Station Officer's previous work experience at Kista Fire Department. They also knew from experience that fires in tunnels are challenging missions. Despite uncertainty and blurred information at hand, they saw a potential crisis in the making and decided to send out both command vehicles (the Rescue Commander's and the Fire Chief's). Had they stuck to regulations, one vehicle would have been enough (Svensson, 2001), but learning from past experiences meant that considerable time was not lost. When the Fire Department shifted roles from operational to strategic, it also benefitted from past experiences. Faced with the new task of organizing the City's coordinating work during the Kista blackout, the experience he gained from chairing operational staff meetings benefitted the Fire Chief when the time came to head the first coordination meeting.

Concerning the decision to send firefighters into the tunnel and the debate that the decision sparked at the Johannes Fire Station, it is not a given that the Fire Department would opt to act in the same way again, especially if human life is not at risk. Firefighters might decide to not go deep into the tunnel or to let the cables finishing burning before entering (Andersson, 2001c). The Fire Department was clearly faced with a strenuous task. Göran Andersson, who was in charge of the Fire Department's evaluation of the events, has said that, "If it had happened today it is far from certain that we would have reacted in the same way. [...] Under "normal" circumstances, we do not go so deep into tunnels with firefighters" (Andersson, 2001a). Naturally, repercussions could have been far worse if the Rescue Commander had made another decision. Then the damages to the cables would have been greater and repair work would have taken more time. The state of uncertainty for all actors would possibly have worsened as the time span of the blackout would have been in the air for a longer time since it would have been nearly impossible for Birka to assess the damage. Given the debate that the fire extinction operation triggered, it is interesting to ask what would happen if a fire broke out even deeper inside a tunnel. Would firefighters jeop-

ardize their own safety by entering the tunnel and trying to extinguish it, or would they simply let the fire burn? When fires have occurred in tunnels in the past, it has not been uncommon for the Fire Department to wait until the fire has burned out.<sup>79</sup>

### 7.9.3. THE REPORT COMMISSIONED BY THE CITY

The Fire Department's interest in learning has not stopped at mere discussion. Actions have been taken on a number of levels, which have led to a comprehensive learning process. In order to generate suggestions for mitigating society's vulnerability as well as proposals that might improve the prospects for City management and coordination during crises, City Manager Jörgen Kleist instructed the Fire Department to evaluate the events with emphasis on the City's leadership, coordination and information efforts. This was of special importance, since the City's rescue service plan was in the process of being redrafted. In the immediate wake of the Kista blackout, the Fire Department gathered written testimonies from major societal stakeholders (SBF, 2001:6f.). Within a month of the actual events, all recipients were invited to identify what the problems were and why they occurred in the first place. They were also asked to indicate which parts of crisis management went well and to explain the underlying reasons for this (ibid:43). Experts within the field of crisis management and infrastructural strain (among them CRISMART) posed some of the questions. From the answers, the Fire Department managed to develop a good overall picture of the City's crisis management. In the process, the Fire Department also scrutinized its own administrative as well as operational management and coordination (ibid:6f). The second part of this learning process was to invite district and municipal actors involved in the blackout to a seminar, or a day of learning, pertaining to the events in Kista. It is encouraging that the City has taken the Kista blackout seriously, and hopefully, it is a sign that crisis preparedness implementation will be undertaken. Interestingly, this program shares many similarities with the comprehensive attempts at learning that emerged following the Auckland power outage in 1998 in which a number of city actors wrote reports

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<sup>79</sup> One such occasion was the train disaster in Kaprun in Austria that left 155 people dead. Smoke and heat made it impossible for the rescue service to reach the fire location, and the Austrian rescue service decided that they could not possibly enter the tunnel (see Larsson, 2001).

on the issue (Newlove et al, 2000:154ff.). Initiatives such as these may prove crucial for implementing crisis preparedness reforms. Post-crisis learning in the Buenos Aires case, on the other hand, stands in glaring contrast to Kista and Auckland. As of Fall 2001, no comprehensive report commissioned by the government or the power company had been published (Ullberg, 2001:54). It may well prove vital when the next crisis occurs that the Stockholm Fire Department chose to scrutinize the Kista blackout and to focus on its own role and the City's coordination efforts. In addition, these seminars and reports have surely led to a discussion within the municipality on mandates and roles during crises. It should be fairly well known by now within the ranks of the Fire Department and in the City at large that the Fire Department is in charge of the mission to initiate and coordinate the City's efforts during periods of severe societal strain.

#### 7.9.4. LEARNING AT THE DISTRICT LEVEL

In terms of Kista DA's crisis organization, short-term learning has led to plans to ensure that the administration is better equipped with emergency resources, including food, blankets, portable field kitchens, flashlights and generators. In the opinion of the District Director, Luis Abascal, these plans will be implemented. Informing the public in different languages will hopefully also be included in future local crisis planning, but as of Fall 2001, this had not yet been institutionalized (Abascal, 2001). When Kista DA investigated the situation at a later stage, some efforts were also made to clarify the role of the Crisis Coordinator. Following adjustments to the contingency plan, it was made explicit that the District Director is to contact the Crisis Coordinator when a contingency occurs. Successful improvisational efforts undertaken during the Kista blackout have been incorporated into the DA's contingency planning. In the event of a future crisis, Husby Träff will function as the crisis management center, and operational crisis management meetings and public information efforts will take place there. Although operating in the same building, the units will be separated from one another. Operational crisis management will meet in a new "War Room" with one telephone line for outgoing calls and one line for incoming calls. In addition, a third telephone line has been established in Husby Träff. None of these new lines are connected to the 508 code. Further adjustments to Kista

DA's emergency planning include the future signing of a deal with the Civil Defense League in Kista on coordinating information efforts and food assistance as well as an oral agreement with Svenska Bostäder that the DA will be allowed to utilize its generator for Husby Träff to power the ground floor. According to the DA's crisis coordinator Christer Wohlfarth, these agreements will be incorporated into emergency planning as soon as they are formalized (Wohlfarth, 2002).

Rinkeby DA, in turn, has streamlined its crisis organization. Now the staff member in charge of crime prevention is also in charge of crisis planning and organization. He is in daily contact with the police, security companies and others who are responsible for security in the district. According to the District Director, Dag Jutfelt, there used to be a weakness in the system resulting from the fact that the DA's higher managers tended not to have established contacts with those responsible for district security, for instance the security guards. In the event of a contingency in Rinkeby, the Crime Prevention Manager will have operational authority and the District Director will be in charge of external information to the press and the public. In Jutfelt's view, the new structure will also lead to a more flexible division of power during crises and increase the possibility of altering the crisis management structure if things are not running smoothly. Higher management will then be able to step in and take over the responsibility of the operations (Jutfelt, 2001).

#### 7.9.5. LEARNING: THE PRIVATE SECTOR

For Ericsson, a fundamental piece of learning has been to decrease the company's vulnerability in the event of a new, large-scale black-out. Along these lines, Ericsson's Security Manager, Stellan Svensson, has submitted a proposal to management on the purchase of reserve power diesel generators. This proposal is very similar to the one that was aired prior to Y2K. At that time, Ericsson generated some reports on the issue, but decided not to take the risk. When interviewed in late October 2001, Stellan Svensson explained Ericsson's line of thought: "Not even at the millenium did we expect a 30-hour black-out. But now, especially after the events of recent months, I believe that we do expect the unexpected" (Svensson, S., 2001). Ericsson's change of attitude is a consequence of the intersection of local analo-

gies from the Kista blackout with international events such as September 11.

After the blackout, DN's vice president Fredrik Åkerman has admitted that emergency planning must be updated (Holmkvist, 2001). As a media organization, DN's learning from past experiences has been rather uncomplicated. Implemented changes included a formal deal with an external printer in order to be able to publish in the event of a new blackout (Anderberg, 2002; Lundell, 2002; Forsberg, 2002).<sup>80</sup> In addition, a system to get the pages to the external printer, which was the critical point during the Kista blackout, has become part of the emergency organization (Forsberg, 2002; Anderberg, 2002). *Aftonbladet* was the only paper that had emergency schemes in place that could be applied when the blackout struck the printer in Akalla. Because *Aftonbladet* had a lot of problems with the printer in Akalla in the mid 1990s, they began collaborating with *Vestmanlands Läns Tidning* at that time. According to the Editor-in-Chief, Anders Gerdin, the organization learned a lot from these past experiences, and when the Kista blackout struck, the same working model could be applied, even though many years had passed (Arnborg, 2001).

In conclusion, modern society has become highly dependent on electricity and less accepting of power failures. Local residents in the affected areas were not expecting such an event to occur, and what was even more remarkable, neither was the City's higher management, who was taken aback by the lack of redundancy in Birka's system (Johansson, 2001; Kleist, 2001). Prior to the blackout, it was unthinkable that a prolonged and large-scale blackout was possible in an urban setting such as Kista. The Kista blackout, then, made it clear for those managing the City of Stockholm—politicians and residents alike—how vulnerable modern society really is.

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<sup>80</sup> *Tidningstryckarna*, which prints AB and SvD, has also planned to arrange for a back-up deal for the printer in Akalla (Holmkvist, 2001).



## 8. Concluding Remarks

The aim of this study has been to describe and analyze the management of the blackout that struck the northwestern suburbs of Stockholm in March 2001. The outcome of the Kista blackout was relatively positive, not least when compared to other infrastructural crises that have been studied by CRiSMART. In recent times, a number of prolonged power outages have struck urban centers in industrialized countries. The power outages that appeared in the wake of the ice storm in Montreal and its surroundings in 1998, the Auckland blackout in the same year and the Buenos Aires blackout of 1999 are examples of such events. The latter two cases, in particular, share a number of common denominators with the Kista case.

In terms of the context, there has been an ongoing international trend of privatization and internationalization of power production and supply for some years now. This makes it harder for state and municipal actors to gain insight into these complex electricity systems and monitor maintenance of power supply facilities. In addition, power dependency among the public and society at large is increasing and the interdependency between complex technical systems is intensifying. It is important to keep in mind that one cannot rule out the possibility that events similar to those in Auckland, Buenos Aires and Montreal may occur in Sweden. Therefore, it is vital that these international events, along with less perilous national ones, are not dismissed as freak accidents but are instead viewed as positive learning experiences.

### 8.1.1. CRISIS MANAGEMENT AFTER THE KISTA CASE

The 37-hour blackout in Kista can be characterized as what crisis researchers refer to as a “near miss” — a serious contingency but not a large-scale crisis. This also seems to be the perception among managers in Stockholm City Hall. It is, however, imperative that experience gained from these near misses is acknowledged, since these experiences provide just as many opportunities for crisis preparedness development and learning as full-fledged crises do. These experiences can also be seen as exercises or preparation for the next crisis that will in-

evitably occur. In this respect, the case of Kista raises some points that are worthy of further reflection.

***Unchallenged disagreements tend to resurface:*** In terms of problem perception, it is favorable for crisis managers to reach a mutual understanding of the framing of the problem. Unnecessary conflicts that might emerge in the aftermath of the crisis can be avoided if a discussion on framing is held at an early stage. Although implicated crisis actors in Kista state that all players focused on the same problems, there were evidently different perceptions of how serious the problem actually was. This report shows signs of two diametrically different appraisals of the situation. On the one hand, city leadership evaluated the events as an incident, although serious, and its response hinged upon this fact. Kista DA, on the other hand, perceived the situation as a crisis and reacted in a proactive way. To some extent and contrary to the principle of proximity, Kista DA wanted more assistance from the City. But mental blocks creating communication problems between the districts and the City meant that Kista DA turned to neighboring municipalities instead of the city leadership for assistance, which would have been a more natural choice.

***It can happen here:*** It is important that not only high risk but also low probability incidents are embedded in preparedness schemes and working models. This is a starting point for eliminating the “it can’t happen here” mentality that is a detriment to crisis preparedness and organization. Before the blackout in Kista, societal actors and Birka managers did not suspect that a long-lasting and widespread power outage could occur in such an urban setting. Birka’s system appeared reliable and designed to cope with cable failures by instant reconnections to reserve cables. The reliability of the system turned out to have been overestimated, as was system security. The design of Birka’s system with backup cables placed in the immediate vicinity of main cables exacerbated the effect of the cable fire, since there were no reconnection options left undamaged by the fire. The system design, then, was not built to respond to contingencies like blazing fires, which demonstrates that Birka’s organization lacked the ability to expect the unexpected. Another important feature here is the high reliability of Birka’s system. Technological advances in the system led to far too much confidence in mechanical supervision and alarms. It is interesting to note that, on this occasion, technical alarm installations

led to delays in alerting the necessary parties. It took a visual inspection to determine for certain that there was a fire in the tunnel.

***Overestimate rather than underestimate:*** When the unexpected suddenly occurs, it is crucial that crisis managers do not resort to overly optimistic interpretations of the events at hand. Experience shows that the public and elites tend not to forgive decision-makers that underestimate the scale of a contingency, while they accept more easily stakeholders that overestimate the effect of a crisis (Newlove et al, 2000:162). Interestingly enough, in the case of Kista, Birka displayed both underestimation and overestimation. Data on the damage the fire had caused was available after the Rescue Commander decided that he wanted the power cut. Following the decision, there was no way of telling if damage had been caused to the 110 kV cables or not. It is thus quite clear that underestimation had negative repercussions. Had Birka not eliminated the worst-case scenario, the City's crisis organization and coordination efforts could have been initiated at an earlier stage. Since societal crisis stakeholders based their perception of the problem on Birka's perception, in most cases crisis organization took on a "wait-and-see" approach during a great part of the first day of the blackout.

***Keep a long-term perspective:*** Crisis management research has shown that that the holistic view of a crisis is a post-crisis reconstruction and rationalization (Sundelius et al, 1997:47). The crisis management team that is caught up in the "what do we do now" part of the crisis is prone to lose this perspective as it focuses on issues that need immediate attention. Therefore, in times of crisis, it is often useful to set aside personnel who focus on the long-term picture in order to establish a proactive crisis response. In Auckland and Buenos Aires, stakeholders had difficulties looking beyond short-term technical-operational problems and initiating strategic crisis responses (Ulberg, 2001:55). This was also the case in Kista during and after fire extinction in the Akalla tunnel. Crisis managers did not manage to maintain a long-term perspective on the crisis. Efforts were focused on the actual fire and the damages that it had caused. This led to flaws in the alert chain between Birka, the Fire Department's operational management and the City's strategic and coordinating leadership. For many crisis stakeholders, it also meant that crisis organization for a prolonged blackout was not initiated appropriately.

***Do not make promises you cannot keep:*** Actors that release incorrect statements early on in a crisis run the risk of suffering long-term damage to confidence and credibility. This was the case for the power companies EDESUR in Buenos Aires and Mercury Energy in Auckland. On a number of occasions, both companies raised expectations that they would deliver electricity within a short period of time. As it turned out, the blackouts continued all the same. In Kista, Birka operational managers under severe stress decided to release a statement on when power would be restored based on virtually no information at all. The choice was hardly between issuing flawed information and issuing nothing at all. Even when stakeholders are under heavy media pressure, it tends to be more favorable to avoid making promises based on speculation and to stress instead that a solution is underway. In this case, Birka's decision led to a delay in crisis organization in many camps. It also meant that Birka made a promise that it could not keep. Had the crisis lasted longer, managers might have found it hard to cope with these credibility traps. As it turned out, however, Birka managed to release a revised estimation of the deadline on the first day of the blackout. The fact that Birka made that deadline, with time to spare, probably bridged the credibility gap that was caused by the initial assessment.

***Work with the media:*** It is essential that crisis managers acknowledge the imperative role played by the media when crises are at hand. Manipulating the media or showing a lack of openness almost certainly leads to credibility loss. Throughout the crisis, Birka coped with intense media pressure by working proactively with the media. Birka information staff kept in control of the crisis by assuming blame, admitting to the problems and emphasizing that the organization was working hard to reach a solution. By doing interviews and holding press conferences, Birka managed to encourage the media to take a rather sympathetic approach to the company throughout the crisis. A positive spin-off effect was that the media, especially Radio Stockholm, took on a role as crisis actor by spreading Birka's information to the public as soon as it was issued. Notwithstanding the success of Birka's media management, it should be noted that actors often apply a "rally around the flag" strategy in the initial stages of a crisis and work towards solving the situation together. Had the blackout continued, it is quite possible that the media and the public

would have turned against the power company as they did in Buenos Aires in 1999 (Ullberg, 2001:29).

***Symbolic aspects matter:*** When managing crises, showing empathy to the victims will reduce the potential for conflict in the long run. Former CRISMART studies have shown that symbolic management can prevent civil crises from turning into credibility crises or public traumas (e.g. Hagström & Sundelius, 2001). In the Kista case, Kista DA opened an improvised information and command center in the midst of the confused citizens. By staying close to the citizens, a feeling of solidarity between the district elites and the inhabitants emerged and public aggravation was kept to a minimum. In terms of Birka, it cooperated with the local crisis management and participated in meetings of the City's coordination group. But Birka seems to have underestimated the symbolic side of information processing and support. More appearances by company representatives, making them visible to the victims, might have improved the public's perception of the power company. Such symbolism might, for instance, have calmed local storeowners who suffered financial losses during the blackout. In the aftermath of the blackout, their calls for compensation have not received Birka's attention. The way Birka handled the situation, rejecting the ethical aspects of the blackout and focusing on the legal ones, has led to local loss of confidence in Birka. It is difficult to reverse such a loss of confidence once it has occurred. At an earlier stage, this disagreement might have been resolved by symbolic action.

***Openness is likely to be rewarded:*** In order to keep credibility intact over the course of a crisis, decision-makers may find it necessary to hide the truth. However, this is a dangerous venture that might backfire. In the case of Kista, the decision not to employ the Home Guard's services on the first night of the blackout when they were needed the most was delayed mainly due to bureaucratic-economic reasons. As formal rescue statutes were not invoked, rescue services were not requested according to the Rescue Service Law. The Military Authority then required full reimbursement for its service costs, and competition laws had to be considered. True, crisis managers should avoid arguments based on cost, but justifying actions on the basis of fabricated excuses is risky. The decision not to call for military assistance was portrayed to the district as one based on cultural rather than economic aspects, namely that residents might be fright-

ened of the military or perceive its presence as a sign of a crisis out of control. This created disappointment among Kista DA personnel, and the DA interpreted the cultural reasoning as prejudiced rather than sensitive, thus jeopardizing relations between the City and Kista DA. It may have been better if Kista DA had been briefed about the economic and bureaucratic aspects that hampered the deal.

***Urban crises have specific features:*** The infrastructure in growing urban areas is becoming increasingly condensed. In addition, the complexity in the infrastructural environment that permeates modern urban centers is on the increase (Castenfors & Svedin, 2001:237). In roughly twenty years, Kista has grown into a complex modern center with vital infrastructural, economic, and social services. It is inevitable that the repercussions of a blackout in such an area would reach far beyond district borders. In Kista, the blackout affected corporations vital for the national high-tech industry as well as the distribution of newspapers in an area stretching beyond the greater Stockholm region. Cultural complexity is intensifying alongside infrastructural complexity. Kista is an area inhabited by people with culturally diverse backgrounds, so the blackout meant that crisis managers also had to cope with conveying information to residents who did not understand Swedish. Surprisingly enough, only Kista DA succeeded in informing people in other languages than Swedish, and this was achieved through improvisational measures, not emergency planning. It might be fruitful for district actors to study crisis management in Gothenburg during the 1998 discotheque fire. There, the local radio demonstrated vigilant crisis management by engaging municipal interpreters in order to help victims to access crucial information in their mother tongue. Since crises more serious than the Kista blackout are bound to strike Stockholm in the future, it is essential that we learn from the events in Kista, i.e., that crisis communication capacity in foreign languages is vital in district and municipal organizations.

No people were harmed during the Kista blackout, a fact that might lead us to conclude that the Kista case ended on a relatively positive note. However, while crisis management during the blackout was generally effective, its management was also helped by a number of favorable circumstances, including the presence of ABB cable experts in Stockholm for a conference when the fire broke out and relatively mild weather (Bruce, 2001). A number of successful choices also played a role, including the department's decision to send fire-

fighters into the tunnel as well as the idea to repair the system temporarily. These coincidences and successful choices ultimately led to an outage that “only” lasted 37 hours. Had it not been for these circumstances, there is no telling what course of events crisis management of the blackout might have taken. It is therefore essential that the lessons learned in the Kista crisis and incidents like it be put into practice in future municipal crisis organization.





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**APPENDIX 1. Interviews**

**Luis Abascal**, District Director at Kista District Administration at the time of the blackout. Interviewed at the Electrum head office in Kista on October 29, 2001.

**Sten Anderberg**, Manager for Printing and Distribution at Dagens Nyheter. Interviewed at the DN head office in Stockholm on February 20, 2002.

**Göran Andersson**, Principal Fire Engineer at Stockholm Fire Department and in charge of the report commission by the City of Stockholm on the Fire Department's management and coordination of the City's efforts during the Kista blackout. Interviewed at Johannes Fire Station in Stockholm on September 27, 2001.

**Sakir Demirel**, Manager of Social Support and Disabled Care at Rinkeby District Administration and acting district director at the time of the blackout. Interviewed at the Rinkeby DA building on December 14, 2001.

**Björn Forsberg**, member of the distribution staff at Dagens Nyheter. Interviewed at the DN head office in Stockholm on February 20, 2002.

**Lars Hallander**, Fire Chief at the Stockholm Fire Department on March 11, 2001. Interviewed at Johannes Fire Station in Stockholm on January 24, 2002.

**Dag Jutfelt**, District Director at Rinkeby District Administration. Interviewed at the Rinkeby DA building on December 14, 2001.

**Ingemar Karlsson**, Manager of Operations Stockholm at Birka Nät. Interviewed at the Birka Energi head office in Stockholm on October 17, 2001. A follow-up interview took place on February 5, 2002.

**Jörgen Kleist**, City Manager at the City Executive Office. Interviewed in Stockholm City Hall on October 9, 2001.

**Tommy Lundell**, Manager of Transportation at Dagens Nyheter. Interviewed at the DN head office in Stockholm on February 20, 2002.

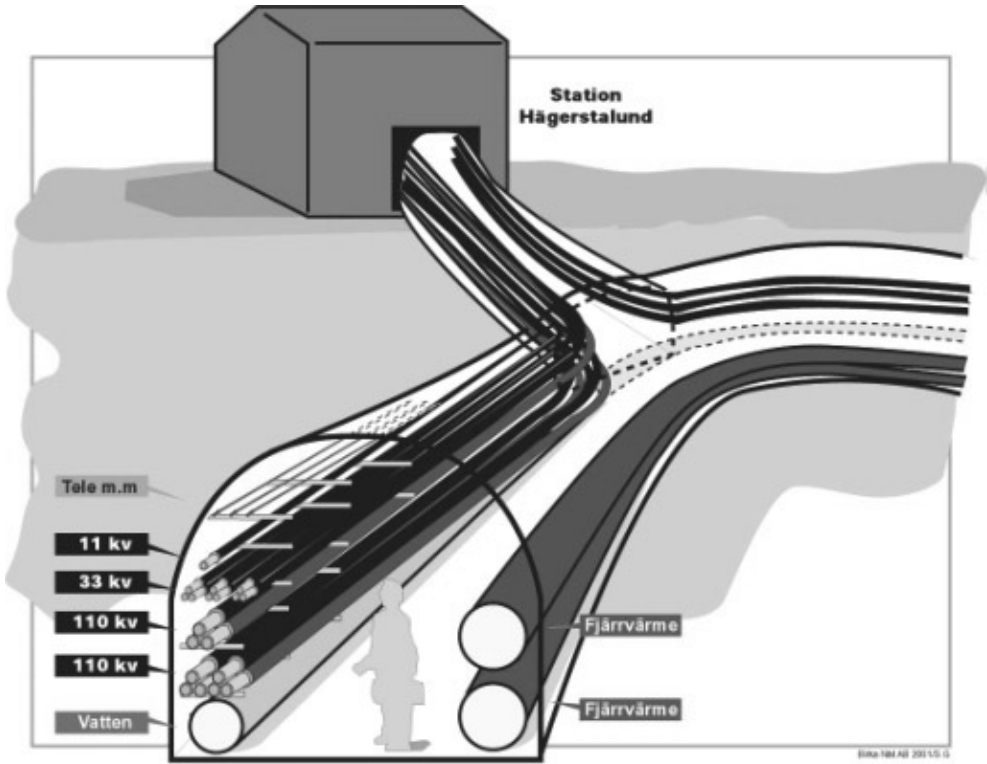
**Göran Svensson**, Rescue Commander on March 11, 2001 at the Stockholm Fire Department. Interviewed at the National Defence College in Stockholm on October 5, 2001.

**Stellan Svensson**, Security Manager at Ericsson Radio Systems. Interviewed at the Ericsson Radio Systems head office in Kista on October 24, 2001.

**Christer Wohlfarth**, Crisis Coordinator and Property Officer at the Kista District Administration. Interviewed at the Kista DA building on January 7, 2002.

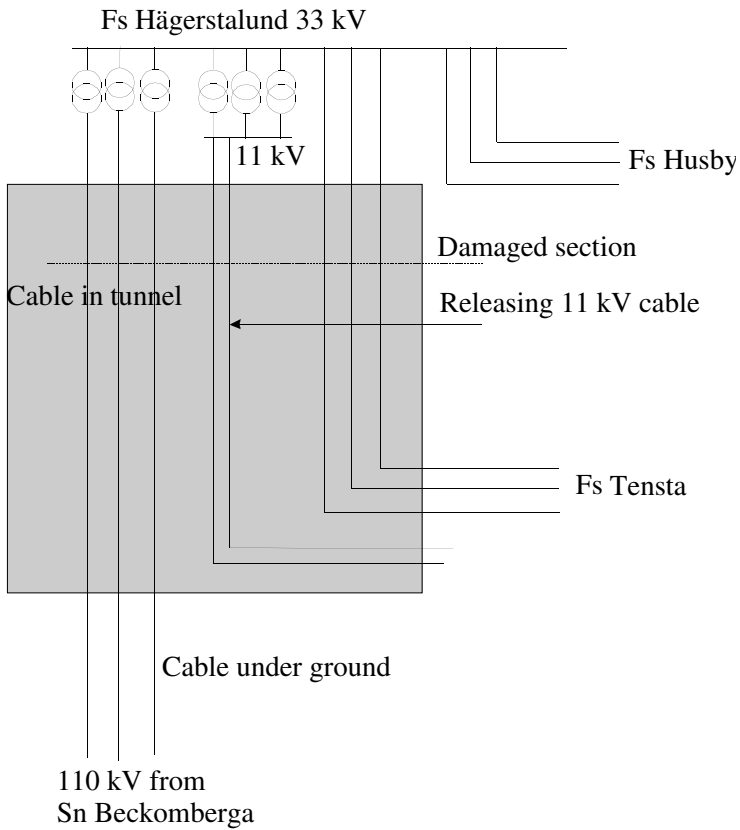
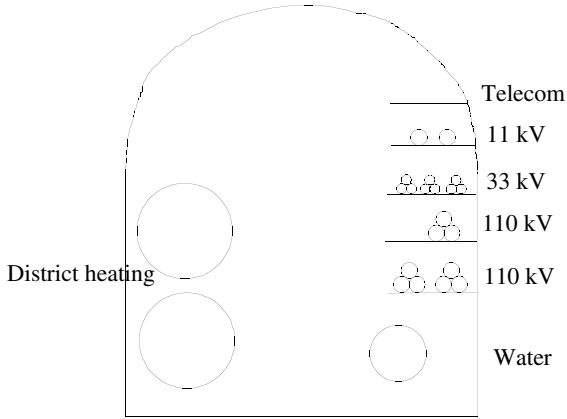
**Claes Tornérhielm**, Husby Center Business Association's Coordinator of compensation claims by small businesses against Birka Energi. Interviewed at the Svenska Bostäder office in Kista on October 10, 2001.

## APPENDIX 2. The Akalla tunnel



Source: Birka Bildserie, 2001.

**APPENDIX 3. Visual schematics of the location of the cables**



Source: Östlund, 2001:4–5.

## APPENDIX 4. Swedish power supply incidents in recent decades

Incident	Year	Comment
National grid incident in Jämtland	1955	Large disruption
Fire in transformer station in Södertälje	1962	City without power 24 hours
Snowstorm	1966–67	10,000 end users in upper Norrland 4 days without power
Storm1	969	Some 100,000 end users without power some for up to 3 days
Thunderstorm caused blackout in Gothenburg	1969	Crisis alerts at two refineries halted operations causing several fires
Dry spell caused low water levels in regulation basins	1969–70	Restrictions of usage and power saving restrictions were prepared for
Fire in a transformer and cable in Härnösand	1973	City without power for almost 2 days
National grid disturbance in Norrbotten	1979	Production and distribution in upper Norrland came to a halt — 5-hour blackout for some end users
National grid error in Enköping	1983	Southern and mid Sweden without power —some end users without power for 10 hours
Sabotage of the regional grid in western Norrland caused outage	1986	Process industry brought to a costly standstill
Sabotage of distribution station and a local network in Gothenburg	1988	The aim was to cause damage to certain industries — the blackout affected residential areas and oil refineries
Cable fire in a tunnel in Stockholm	1989	Blackout in a city district for up to 17 hours
Sabotage of a cable post in Härjedalen	1989	A 400kV pole blown up
Sabotage of a grid station in Uppland	1990–92	Several attempts to damage a station feeding power to Stockholm
Poles come down in Västernorrland	1991	Heavy ice on the poles and wires
Bad weather causes disturbance to regional and local networks in Gävleborg	1992	Extreme ice build up
Snowstorm	1992–93	Four days without power for up to approx. 100,000 end users in southern and western Sweden
Snowstorm. 103 cm snow in Gävle	1998	1,000 rural end users without power for a day

Source: SOU 1995:20.

