

13. CONDUCT OF OPERATIONS

13.3 Emergency Planning

The U.S. Nuclear Regulatory Commission (NRC) evaluates emergency plans for nuclear power reactors to determine whether there is reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. An early site permit (ESP) application, pursuant to Title 10, Section 52.17(b), of the *Code of Federal Regulations* (10 CFR 52.17(b)), must identify any physical characteristics unique to the proposed site that could pose a significant impediment to the development of emergency plans. The application must also describe contacts and arrangements the applicant has made with Federal, State, and local government agencies with emergency response planning responsibilities. In addition, the application may propose major features of the emergency plans, as described in Supplement 2 to NUREG-0654/FEMA-REP-1, Revision 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants—Criteria for Emergency Planning in an Early Site Permit Application—Draft Report for Comment," (hereafter referred to as Supplement 2) issued April 1996, or may propose complete and integrated emergency plans.

The Exelon Generation Company, LLC (EGC), ESP application includes the "Emergency Plan for the Exelon Generation Company, LLC Early Site Permit" (hereafter referred to as the EGC ESP Emergency Plan), which addresses the major features option allowed for ESP applications under 10 CFR 52.17(b)(2)(i). Because the proposed ESP site footprint consists of a portion of the existing Clinton Power Station (CPS) facility, and is located immediately adjacent to CPS, very little distinction exists between the CPS site and the ESP site for purposes of emergency response planning.

The NRC staff, in consultation with the Federal Emergency Management Agency (FEMA), has reviewed the applicant's proposed EGC ESP Emergency Plan, Volume I of the Illinois Plan for Radiological Accidents (IPRA) dated May 2001, Volume VIII of the IPRA dated July 2001, and responses to requests for additional information (RAIs) in accordance with NRC Review Standard (RS)-002, "Processing Applications for Early Site Permits," dated May 3, 2004.

In RAI 13.3-2, the staff requested copies of the versions of the State and local emergency plans that the applicant refers to in the application. On December 15, 2004, the applicant provided copies of the State and local plans in response to RAI 13.3-2. However, the applicant provided a more recent version of IPRA Volume VIII than it references in its application. The applicant also provided a summary of the changes to IPRA Volume VIII in the more recent version. The staff did not have time to complete its review of this information before preparation of the DSER. Therefore, staff review and acceptance of the information provided by the applicant on December 15, 2004, in response to RAI 13.3-2 is **Confirmatory Item 13.3-1**.

Because the applicant has elected to present and seek NRC acceptance of the major features of emergency plans, the staff's evaluation addresses, in order, the three aspects of such a submission. The following identifies the section of this safety evaluation report (SER) in which each aspect is discussed:

| <u>SER Section</u> | <u>Aspect</u> |
|--------------------|--|
| 13.3.1 | - identifies physical characteristics that could pose a significant impediment to the development of emergency plans |
| 13.3.2 | - describes contacts and arrangements made with Federal, State, and local government agencies with emergency planning responsibilities |
| 13.3.3 | - proposes major features of the emergency plans |

The applicant identifies 10 CFR Part 50 as applicable to the major features it proposes. Appendix E, however, applies to the “major features” option of 10 CFR 52.17(b)(2) only to the extent that it requires description of the “essential elements of advance planning that have been considered” (see 10 CFR Part 50, Appendix E, Section III). The staff has made findings approving the applicant’s identification of Appendix E as one of the regulatory requirements applicable to the staff’s review of the major features proposed by the applicant. These findings, which are set forth throughout Section 13.3.3 of this SER, are limited to those particular portions of Appendix E that the staff considered during the course of the staff’s review of a particular major feature. More importantly, any staff finding that a proposed major feature complies with a particular requirement of Appendix E is limited to the description of the major feature approved by the staff.

Notwithstanding any staff approval of a proposed major feature in this SER, all features of the emergency plan requiring description pursuant to Appendix E but which are not described in the ESP application will be reviewed in the context of a combined license (COL) or operating license (OL) application. The staff will review complete and integrated emergency plans submitted in a COL/OL application to determine whether they comply with such requirements, as well as the requirements of 10 CFR 50.47.

The staff’s evaluation of the proposed major features of the applicant’s emergency plans parallels the major features and planning standards in Supplement 2.

13.3.1 Significant Impediments to the Development of Emergency Plans

13.3.1.1 Technical Information in the Application

The applicant states in Section 2.3, “Evacuation Time Estimate Analysis,” of the EGC ESP Emergency Plan that the evacuation time estimate¹ (ETE) performed in 1993 for the CPS plume exposure pathway served as the basis for the ETE analysis supporting its ESP application. The applicant further states that the 1993 ETE assesses the relative feasibility of an evacuation for the 10-mile emergency planning zone (EPZ) plume exposure pathway. The applicant evaluates the assumptions that served as the basis for the 1993 ETE; Section 2.3.1, “Assumptions,” of the EGC ESP Emergency Plan lists these assumptions. The applicant finds these assumptions to remain valid for the area surrounding the ESP site.

¹ “Evaluation Time Estimates for the Clinton Power Station,” July 1993

Sections 2.2, “Summary of Methodology,” and 5.5, “Evacuation Simulation,” of the 1993 ETE describe the methodology used, including the NETVAC computer simulation model. This model has many features that enable a reasonably sophisticated modeling of the road network, the use of evacuation preparation and departure time distributions, and the use of population and vehicle demand distribution data to simulate a variety of evacuation scenarios.

The 1993 ETE identifies the worst-case ETE for the entire EPZ as a summer weekday, with an ETE of 200 minutes for fair weather and 255 minutes for adverse weather. The Apple and Pork Festival on summer weekends results in an ETE of 380 minutes for fair weather and 530 minutes for adverse weather.

Volumes I and VIII of the IPRA reference the 1993 ETE in the “Planning Standards and Evaluation Criteria Correlation Document,” for each volume. The 1993 ETE uses 1990 population data. An assessment of changes in population, using the 2000 census data, was conducted in 2003 in the “Phase One Report—Assessment of Changes within the Emergency Planning Zone for Clinton Nuclear Generating Station,” issued in December 2003 (hereafter referred to as the Phase One Report). In RAI 13.3-15, the staff asked whether the information contained in the Phase One Report documenting the assessment of population changes in the plume exposure pathway EPZ should be considered as an update to the 1993 ETE. In response to RAI 13.3-15, the applicant stated that it did not use the Phase One Report in the preparation of the EGC ESP Emergency Plan and that it need not be referenced or considered because Section 2.3.3, “Analysis—Comparison of Infrastructure and Population,” of the EGC ESP Emergency Plan independently develops and describes the report’s conclusions.

Section 2.2.1, “Plume Exposure Pathway Emergency Planning Zone,” of the EGC ESP Emergency Plan states that the EGC ESP site EPZ boundary is identical to the CPS EPZ, which is within approximately a 10-mile radius of the ESP site. Figure 2.1-1, “ESP EPZ with Radial Grid,” of the EGC ESP Emergency Plan illustrates the radial boundary of the ESP site plume exposure pathway EPZ. The figure also shows transportation networks, topographical features, and political boundaries. Figure 2.2-1, “ESP EPZ Subareas, Evacuation Routes, and Relocation Centers,” of the EGC ESP Emergency Plan delineates the actual EPZ, superimposed on the 10-mile radial grid, along with evacuation routes, subareas, and relocation centers.

In RAI 13.3-17, even though some extrapolated population data have been provided for the addition of two reactors at the Clinton site and refueling outages, the staff asked the applicant to provide additional extrapolated population data for the next 20 years (i.e., the life of the ESP application) and discuss their impact on ETEs. In response to RAI 13.3-17, the applicant stated that Section 2.1, “Geography and Demography,” of the EGC ESP Site Safety Analysis Report (SSAR) discusses the population data extrapolated for 60 years (i.e., the life of the ESP plus the life of the operating license). The applicant further stated that the extrapolated population results do not represent a significant change from those considered in the 1993 ETE and, therefore, minimal impact is expected.

Section 2.3.2, “Population Data,” of the EGC ESP Emergency Plan estimates the number of people within the 10-mile EPZ who would require evacuation. The applicant developed population estimates for the number of permanent residents within the 10-mile EPZ from 2000 U.S. Census Bureau data; Table 2.1-1, “Census 2000 Demographics within 10 Miles of the Clinton Power Station in 1-mile Bands by Radial Grid Sector,” and Figure 2.3-2, “ESP EPZ

Permanent Population by Radial Grid Sector,” in the EGC ESP Emergency Plan provide these data. The applicant derived the seasonal resident population from the 2000 U.S. Census Bureau data category, “Vacant Housing for Seasonal, Recreational or Occasional Use.” In Section 2.3.2.2, “Seasonal Population,” of the EGC ESP Emergency Plan, the applicant stated that it multiplied the value in Table 2.3-1, “Census 2000 Demographics Data within 10 miles of the Clinton Power Station by Radial Grid Sector,” by the previously accepted household occupancy rate of 3, resulting in a total seasonal population of the 10-mile EPZ of 105. Section 2.3.2.3, “Transient Population,” of the EGC ESP Emergency Plan addresses the population estimates for transient facilities (e.g., hotels/motels, major employers, visitors to recreational areas). Tables 2.3-2, “2002 Transient Population,” and 2.3-3, “Estimated EPZ Size Transient Population,” referenced in Section 2.3.2.3 of the EGC ESP Emergency Plan, also provide transient population data. Table 3.11, “Clinton EPZ Population by Subareas: All Conditions,” in the 1993 ETE provides similar tabulations of data based on the 1990 census. The 1993 ETE and the ESP application consider the Apple and Pork Festival, a special event when the total summer weekend transient population increases to 65,676 persons. The auto occupancy factor for transients depends on whether they are at campsites or are employees. Section 2.1, “Sources of Data and General Assumptions,” of the 1993 ETE provides these data.

The applicant states in Section 2.3.2.3 of the EGC ESP Emergency Plan that it developed the estimates from 2002 survey data and that the DeWitt County Emergency Services and Disaster Agency (ESDA) coordinator verified them. Section 2.3.2.3 also states that the transient population statistics include migrant farm workers because of the nature of the farming in the region. This section of the EGC ESP Emergency Plan also discusses the CPS site population.

To evaluate the significant impediments to the development of an emergency plan, the applicant used the sequence of constructing and operating dual AP1000 units on the site. Section 2.3.2.3.1, “Special Population,” of the EGC ESP Emergency Plan addresses special populations. Table 2.3-4, “2002 Special Population in 10-mile EPZ,” in Section 2.3.2.3.1 presents the special population estimates for the four seasons and the weekday or weekend scenarios. The applicant developed the population estimates for special facilities (schools, hospitals, nursing homes, and correction facilities) from 2002 survey data, and the DeWitt County ESDA coordinator verified them. The 1993 ETE provides similar data tabulations in Table 3.11.

Section 2.3.3 of the EGC ESP Emergency Plan describes the analysis to test the current validity of the 1993 ETE conclusions. The applicant drew the following conclusions from its analysis:

- The infrastructure baseline used in the 1993 ETE has not changed and, therefore, does not impact the conclusions of estimated evacuation time.
- The permanent and seasonal population increase is considered negligible and has no negative impact on the 1993 ETE.
- The resulting special population increase of 26 individuals has no negative impact on the estimate for evacuation time.
- The total population estimate for the limiting summer weekday case has not changed significantly and, therefore, it has no negative impact on the ETE.

- The population and its distribution have not changed significantly; therefore, the modeling of vehicle entry into the roadway network has not changed. With no changes to the roadway network and no significant changes to the total population, there is no impact on the 1993 ETE and the conclusions of that analysis remain valid.

Section 2.3.4, “Analysis—Special Event,” of the EGC ESP Emergency Plan describes the analysis of the ETE for the annual Apple and Pork Festival. The applicant concludes that the evacuation times for fair and adverse weather contained in the 1993 ETE remain valid.

The ETE analysis in Section 2.3 of the EGC ESP Emergency Plan assesses the relative feasibility of an evacuation for the 10-mile plume exposure pathway EPZ. The applicant based the evacuation times on a detailed consideration of the plume exposure pathway EPZ roadway network and population distribution. The information in Table 2.3-5, “Evacuation Time Estimates,” of the EGC ESP Emergency Plan details representative evacuation times for daytime and nighttime scenarios under fair and adverse weather conditions for the evacuation of various areas within the EPZ (once a decision has been made to evacuate). In Section 2.3.1 of the EGC ESP Emergency Plan, the applicant describes adverse weather as sudden rainstorms that would reduce effective roadway capacity by 20 percent for summer conditions and snowstorms that would reduce roadway capacity by 30 percent for winter conditions. The evacuation times noted include notification, mobilization, and travel time for the general population, including the permanent population and special facilities (e.g., schools, nursing homes, hospitals, and recreational areas).

The 1993 ETE for the CPS plume exposure pathway EPZ served as the basis for the ETE analysis supporting the application. The applicant evaluates the assumptions listed in Section 2.3.1 of the EGC ESP Emergency Plan and finds that they remain valid for the area surrounding the ESP site. The applicant further states in Section 2.3.1 that the preparation and mobilization times developed for each population component (i.e., permanent residents, seasonal residents, transient, and special facilities) in the 1993 ETE analysis are reasonable.

Section 2.3.3 of the EGC ESP Emergency Plan compares the road and highway infrastructure that was the basis of the links and nodes input to the NETVAC program employed in the 1993 ETE to the current infrastructure. This analysis also compared a geographic information system (GIS) plot of roads and highways, based on data obtained from the 2000 census TIGER/Line Files, to the plume exposure pathway EPZ blue line drawing and the written description of the 1993 ETE. The applicant took three approaches in this infrastructure comparison. In the first approach, the applicant evaluated EPZ zones defined by 22.5-degree sectors and 1-mile incremental radii overlaying the current GIS plot by comparing them to the similar zones on the blue line drawing. This comparison revealed no differences in the infrastructure, although there were slight differences in the overlay locations resulting from differences in the accuracy of the GIS data versus the 1993 drawing. In the second approach, which occurred in May 2002, the applicant drove the principal roadways described in the 1993 ETE. The verification of roadways included the links and nodes shown in Figure 2.1-1 of the EGC ESP Emergency Plan. In the third approach, the applicant directly compared the link evacuation routes, 901-905 and 801-815, to nodes 1–75 indicated on the drawing and the GIS plot. No differences were noted. Regarding the second approach (i.e., the May 2002 drive of the principal roadways), the staff requested in RAI 13.3-20(f) that the applicant discuss any road changes identified, including new or changed access points, roadway conditions, and any

new roadway constrictions that could reduce the capacity of sections of the route. The applicant has not yet responded to RAI 13.3-20(f).

In RAI 13.3-20(a), the staff asked the applicant to discuss its rationale for excluding shadow or voluntary evacuation in the 1993 ETE. The applicant has not yet responded to RAI 13.3-20(a).

The 1993 ETE states that the road network was obtained by a field survey in 1984 and verified through discussions with the Illinois Power Company, as discussed in Section 2.1 of the 1993 ETE. Section 2.3, "Conditions Modeled," of the 1993 ETE states that the county agency officials agreed that no significant changes to the EPZ roadway network had occurred since 1984. This section also states that the roadways are unchanged and that no major construction projects are planned.

Section 2.1 of the 1993 ETE provides the assumptions used for vehicle occupancy rates. Permanent resident rates are based on the 1990 census average household occupancy rates. Seasonal resident rates are based on the average seasonal resident household size from the 1990 census data. Transient population rates are based on the peak occupancy of recreational and hotel/motel facilities within the EPZ (as determined by a telephone survey). The vehicle occupancy rates are (1) major places for employment—one vehicle per employee, except the rate for CPS, which is 1.5 people per vehicle, (2) recreation areas—1 vehicle per campsite and 3 people per vehicle for all other areas, (3) students—60 persons per bus, and (4) hospitals/nursing homes/correctional facilities—40 people per bus.

Section 2.1 of the 1993 ETE also contains the assumptions for adverse weather conditions. The applicant analyzed sudden rainstorms that would reduce roadway capacity by 20 percent for summer conditions and snowstorms that would reduce capacity by 30 percent for winter conditions. The reductions in capacity and speed in Section 2.3 of the ETE analysis are consistent with the Highway Capacity Manual; however, the difference in the ETE for the winter weeknight adverse and the normal conditions (Table 6.2, "Evacuation Time Estimate Summary, Winter Weeknight") is almost negligible, with no difference in many instances and a 5-minute difference for evacuation of the entire EPZ. In RAI 13.3.20(h), the staff asked the applicant to discuss the reason for the almost negligible difference in the ETE for the evacuation of the entire plume exposure pathway EPZ for the winter weeknight adverse conditions and the normal conditions described in the 1993 ETE analysis. The applicant has not yet responded to RAI 13.3-20(h).

The 1993 ETE provides the time distributions for the evacuation components for the transient and special populations. For school children, the 1993 ETE assumes that it could take up to 1 hour to assemble buses. School buses are loaded into the evacuation network within 30–90 minutes following the decision to evacuate. Some buses are assumed to be located at the school.

For hospitals, nursing homes, and correctional facilities, the 1993 ETE uses data from other, nonsite-specific studies to arrive at the assumption that these facilities would commence evacuation between 1 to 2 hours after the 15-minute notification. In RAI 13.3-20(b), the staff asked the applicant to provide site-specific data for those hospitals, nursing homes, and correctional facilities addressed in the 1993 ETE or to describe the other studies that it used to arrive at this assumption. The applicant has not yet responded to RAI 13.3-20(b).

The 1993 ETE analysis for the total population, provided in Tables 6.1 through 6.4, "Evacuation Time Estimate Summary: Winter Weekday, Winter Weeknight, Summer Weekday, and Summer Weekend," for the season of year and weather scenarios, includes the ETE for special facilities/population. In RAI 13.3-20(c), the staff asked the applicant to provide a separate analysis of the ETE for special populations for normal and adverse conditions. The applicant has not yet responded to RAI 13.3-20(c).

Sections 3.1.2, "Transport-Dependent Permanent Population" and 5.3, "Transportation Dependent Population," of the 1993 ETE analysis address the nonauto-owning population as contributing one vehicle per household which neighbors or State/local authorities would provide. In RAI 13.3-20(d), the staff asked the applicant to provide the following information:

- the basis for the assumption that neighbors and State/local authorities would contribute one vehicle per household for the transport-dependent (nonauto-owning) population, as described in the 1993 ETE study
- the methodology for determining the transport-dependent population
- an estimate of the number of auto-owning residents versus transport-dependent residents
- the initiation/mobilization time distribution for transport-dependent population
- a separate estimate of the time required to evacuate the transport-dependent population

Section 2.3 of the 1993 ETE provides the methodology for determining the number of vehicles and the auto occupancy rates for the different population groups based primarily on studies done elsewhere. In RAI 13.3-20(d), the staff requested site-specific data regarding how many nonauto-owning households are in the plume exposure pathway EPZ. The applicant has not yet responded to RAI 13.3-20(d).

Section 4.0, "The Evacuation Roadway Network," and Appendix 3, "Roadway Network Listings and Capacities from NETVAC," to the 1993 ETE provide a description of the road network, a printout of the network characteristics, and the roadway network listing and capacities. In RAI 13.3-20(e), the staff asked the applicant to clarify whether the 1993 ETE analyzed the characteristics of each segment for the narrowest section or bottleneck of nonuniform roadways. The applicant has not yet responded to RAI 13.3-20(e).

Section 5.4, "Evacuation Preparation Times and Departure Distributions," of the 1993 ETE analysis discusses the time distributions used for the different population types. The time distribution for the permanent resident population did not use site-specific data. Instead, the applicant used data from other studies to arrive at the notification and preparation time distribution. Figure 5.1, "Notification/Preparation/Mobilization Time Distributions," provides this distribution, which assumes that no one begins evacuation for the first 30 minutes (i.e., during the notification period). The permanent resident population time distribution for mobilization and preparation for evacuation spans a period of 2 hours.

Section 6.1, "Evacuation Time Estimate Summary," of the 1993 ETE analysis describes the locations where queuing is likely to occur under the various scenarios. Sections 7.2,

“Evacuation Traffic and Access Control Locations,” and 7.3, “Evacuation Traffic Management Locations and Other Potential Mitigating Measures,” of the 1993 ETE analysis describe the locations identified in the NETVAC simulation which may require traffic management personnel during the evacuation. Section 7.2 includes traffic management at locations warranted by vehicle queuing and delays. The applicant used the NETVAC model results to identify these locations. In RAI 13.3-20(g), the staff asked the applicant to discuss how the NETVAC model accounts for traffic control or whether the ETE would be reduced if these traffic control measures were implemented. The staff also asked the applicant to clarify whether existing traffic control devices would prevail during an evacuation or if emergency personnel would staff traffic control points. The applicant has not yet responded to RAI 13.3-20(g).

Table 4.1, “Primary Evacuation Routes by Township/Incorporated Area,” of the 1993 ETE analysis provides a map of the roadwork in the EPZ. Section 6.1 of the 1993 ETE identifies and discusses road intersections with the potential for delays (queuing) during evacuation. The main access road from CPS to Route 54 is one of the roadways that would experience queuing under both fair and adverse weather conditions for all cases. This delay affects the ETEs for all evacuation scenarios because it originates within the 0–2-mile ring included in all evacuation scenarios.

The 1993 ETE considers a variety of factors necessary for ETEs. For example, Section 6.2, “Apple and Pork Festival,” addresses the Apple and Pork Festival, which brings about 50,000 transients to the township of Clinton. In RAI 13.3-20(i), the staff asked the applicant for the following information:

- the basis for the assumption that 50,000 people, in 16,500 additional vehicles, will enter the evacuation route during the Apple and Pork Festival
- the dependency of the people attending the festival on public transportation to get to their vehicles (if park-and-ride or shuttles are used during the event)
- whether any of these vehicles would return home to pack or pick up relatives before evacuating the plume exposure pathway EPZ
- the estimated time to mobilize from the festival to start of the evacuation
- trip generation times for this event

The applicant has not yet responded to RAI 13.3-20(i).

In RAI 13.3-20(j), the staff asked the applicant to discuss the basis for the population estimate of 22,000 people per day for the festival used in Section 2.3.4 of the EGC ESP Emergency Plan, since the 1993 ETE study adds 50,000 people to the transient population for the Apple and Pork Festival. The applicant has not yet responded to RAI 13.3-20(j).

Section 2.1, “Site Description,” of the EGC ESP Emergency Plan states that the Weldon Springs State Recreation Area has camping, fishing, and picnicking facilities. Section 2.1 also states that Lake Clinton State Recreation Area has facilities to accommodate boating, camping, fishing, picnicking, and hiking. In RAI 13.3-3, the staff asked the applicant to provide additional information concerning the availability of adequate shelter facilities for the public in the Weldon

Springs State Recreation Area and Lake Clinton State Recreation Area. In response to RAI 13.3-3, the applicant stated that the Weldon Springs State Recreation Area and the Lake Clinton State Recreation Area do not include any identified shelter facilities. In the case of an emergency, the applicant expects the public in these locations to leave the recreation area and proceed either to their own homes (if applicable) or to the designated shelter facilities, as identified in Section 10.1, "Notification of On-site Personnel." In addition, the applicant stated that the ETE analysis discussed in Section 2.3 of the EGC ESP Emergency Plan considers this relocation.

In Section 2.4, "Results—Significant Impediments to the Development of an Emergency Plan," of the EGC ESP Emergency Plan, the applicant states that there are no geographic or political impediments to the development of an emergency plan. The applicant also states that Table 2.3-5, "Evacuation Time Estimates," contains those ETEs from the 1993 ETE analysis that remain valid for the current ESP application.

13.3.1.2 Regulatory Evaluation

In Section 1.1, "Overview," of the EGC ESP Emergency Plan, the applicant states that it developed the EGC ESP Emergency Plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2, "Planning Standards and Evaluation Criteria," of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. Therefore, the staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(1), which mandate that the ESP applicant identify physical characteristics unique to the proposed site, such as egress limitations from the area surrounding the site, that could pose a significant impediment to the development of emergency plans. The staff further considered 10 CFR 52.18, which requires consultation with FEMA to determine if the information required of the applicant by 10 CFR 52.17(b)(1) demonstrates that no significant impediment to the development of emergency plans exists. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency response planning information provided in an ESP application.

Supplement 2 defines a significant impediment as a physical characteristic or combination of physical characteristics that would pose major difficulties for an evacuation or the taking of other protective actions. Such unique physical characteristics may be identified by performing a preliminary analysis of the time required for evacuating various sectors and distances within the 10-mile EPZ for transient and permanent populations, noting major difficulties for an evacuation (e.g., significant traffic-related delays), or the taking of other protective actions.

According to RS-002, the applicant should address factors, such as the availability of adequate shelter facilities, taking into consideration local building practices and land use (e.g., outdoor recreation facilities, including camps, beaches, and hunting or fishing areas), and the presence of large institutional or other special needs populations (e.g., schools, hospitals, nursing homes, and prisons) when identifying significant impediments to the development of emergency plans.

Any ETE analysis or other identification of physical impediments should include the latest population census numbers and the most recent local conditions. In addition, the applicant should describe the proposed means for resolving any impediments identified.

13.3.1.3 Technical Evaluation

The staff reviewed the applicant's response to RAIs 13.3-3, 13.3-15, and 13.3-17 and found them to be acceptable based on the evaluation below.

The staff notes that the ESP application site is adjacent to CPS. Integrated onsite and offsite radiological emergency plans currently exist for CPS, which is an operating nuclear power plant. Because CPS is an operating nuclear power plant, with integrated onsite and offsite emergency plans, no significant impediments exist to the development of an emergency plan for the site.

In addition, the applicant has adequately identified physical characteristics unique to the proposed site by performing a preliminary analysis of the time required to evacuate various sectors and distances within the plume exposure pathway EPZ for transient and permanent populations, and has not noted any major impediments for an evacuation or other protective actions.

The ETE analysis includes a map showing the proposed site and plume exposure pathway EPZ, as well as transportation networks, topographical features, and political boundaries. The boundaries of the EPZ, in addition to the evacuation subareas within the EPZ, are based on factors such as current and projected demography, topography, land characteristics, access routes, and jurisdictional boundaries. The applicant's 1993 ETE does not require updating, since the guidance in NUREG/CR-4831, "State of the Art in Evacuation Time Estimate Studies for Nuclear Power Plants," states that, as a general rule, a 10-percent increase in the population indicates a need to check evacuation times.

The ETE analysis in the application includes an estimate of the number of people to be evacuated, using the latest population census numbers and the most recent local conditions. The population estimate also considers permanent residents, transients, and persons in special facilities, including those confined to institutions such as hospitals, nursing homes, and prisons. The applicant also evaluated the school population in the special facility segment of the analysis.

The staff finds that the applicant adequately addressed other factors, such as the availability of sufficient shelter facilities, taking into consideration local building practices and land use (e.g., outdoor recreation facilities, including camps, beaches, and hunting or fishing areas).

The applicant did not identify any other physical characteristics that could pose a significant impediment to the development of an emergency plan, such as new home or shopping center construction, an industrial park, a major increase in the number of new employers, or new roads or highways.

However, the applicant has not yet responded to RAIs 13.3-20(a-j). Therefore, this is **Open Item 13.3-1**.

13.3.1.4 Conclusions

As discussed in Section 13.3.1.1 of this SER, the applicant should provide additional information in response to RAIs 13.3-20(a–j). The staff will determine acceptability of this portion of the ESP application and will document its determination in the final SER (FSER), based on information the applicant has provided to date and in its response to Open Item 13.3-1. However, because the proposed ESP site currently has an operating reactor with integrated onsite and offsite radiological emergency plans, and because the plume exposure pathway EPZ for the proposed ESP site would be the same as the plume exposure pathway EPZ for the operating plant, the staff concludes that no significant impediments to the development of emergency plans for the proposed ESP site exist. The applicant provided other information in the application that is outside the scope of the staff's review of the significant impediments to the development of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.2 Contacts and Arrangements with Federal, State, and Local Agencies

13.3.2.1 Technical Information in the Application

Section 3.1.1.2, "State Agencies," of the EGC ESP Emergency Plan states that the Director of the Illinois Emergency Management Agency (IEMA) has acknowledged support of the EGC ESP Emergency Plan. A letter dated December 9, 2002, from Mr. Jeffrey A. Benjamin, Vice President, Licensing & Regulatory Affairs (EGC), to Mr. Michael Chamness, Director, IEMA, requests IEMA support of the EGC ESP application. The letter states that Mr. Chamness's signature attests to his awareness of Exelon's intent to take credit for the existing IPRA Volumes I and VIII in the ESP application and that no significant impediments exist to implementing the emergency plan for the ESP plant.

Appendix A, "Contacts and Arrangements" to the EGC ESP Emergency Plan contains a letter dated December 9, 2002, from Mr. Jeffrey A. Benjamin, Vice President, Licensing & Regulatory Affairs (EGC), to Mr. Thomas W. Ortziger, Director, Illinois Department of Nuclear Safety (IDNS), requesting IDNS support of the EGC ESP application. The letter states that Mr. Ortziger's signature attests to his awareness of Exelon's intent to take credit for the existing IPRA Volumes I and VIII in the ESP application and that no significant impediments exist to implementing the emergency plan for the ESP plant.

Section 3.2.5, "Agreements in Planning Effort," in the EGC ESP Emergency Plan states that IDNS and IEMA are aware of and have concurred with the applicant's intent to take credit for IPRA Volumes I and VIII in the ESP application.

In RAI 13.3-4, the staff requested documentation of the applicant's contacts and arrangements with local government agencies having emergency planning responsibilities within the plume exposure EPZ. This documentation should specifically address the expanded responsibilities associated with an additional reactor (or reactors) at the Clinton site. In its response to RAI 13.3-4, the applicant stated that the IEMA agreement letter in Appendix A to the EGC ESP Emergency Plan provides documentation of the necessary contacts and arrangements with local government agencies having emergency planning responsibilities within the plume exposure EPZ. The applicant also stated that the State of Illinois established IEMA to

coordinate and assist the counties and municipalities in the event of radiological accidents. The applicant referenced and provided the staff with a copy of the State of Illinois Statute 20 ILCS 3305/2, "Illinois Emergency Management Act."

Section 3.2.5 also states that agreement letters with Federal agencies that are legally required to respond based upon Federal law are not necessary.

13.3.2.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(3), which mandate, in part, that an ESP application describe the contacts and arrangements made with Federal, State, and local government agencies with emergency planning responsibilities. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application.

Supplement 2 states that the description of contacts and arrangements should include the name and location of the organization contacted, the title and/or position of the person(s) contacted, and the role of the organization in emergency planning. The evaluation criteria in Supplement 2, Section V, provide additional guidance, which applies to the submission of emergency plans under the major features option of 10 CFR 52.17(b)(2)(i).

According to RS-002, the ESP application for an operating reactor site should clearly indicate the impact of applying an existing emergency preparedness program element to the expanded use of the site, including any necessary changes to the program in support of a new reactor(s). For example, letters of agreement, reflecting contacts and arrangements with State and local government agencies having emergency planning responsibilities, might need revision to reflect the anticipated presence of an additional reactor(s) at the site. Such revised letters of agreement should acknowledge any impact an additional reactor(s) would have on the agency's emergency response planning responsibilities and should reflect the agency's agreement to the proposed expanded responsibilities. The use of separate correspondence would also be acceptable. If the applicant cannot make arrangements with Federal, State, or local government agencies having emergency response planning responsibilities, for whatever reason, the applicant should discuss its efforts to make such arrangements, along with a description of any compensatory measures it has taken or plans to take because of the lack of such arrangements.

13.3.2.3 *Technical Evaluation*

The applicant's description of contacts and arrangements made with Federal, State, and local agencies does not clearly address the presence of an additional reactor(s) at the site and any resulting impact on government agency emergency planning responsibilities, including the agencies' acknowledgment of the proposed expanded responsibilities. Further, the additional information provided by the applicant does not adequately address RAI 13.3-4. Specifically, the applicant's documentation of contacts and arrangements with local government agencies having emergency planning responsibilities within the plume exposure EPZ (potentially DeWitt, Macon, McLean, and Piatt Counties; the municipalities of Clinton, Wapella, and Weldon; and the Village of DeWitt) does not address the expanded responsibilities associated with an additional reactor(s) at the Clinton site. Therefore, these items are **Open Item 13.3-2**.

13.3.2.4 *Conclusions*

As discussed above, to obtain acceptance of the portion of the ESP covering contacts and arrangements with Federal State, and local agencies, the applicant should provide an adequate description of its contacts and arrangements with these agencies. This description should clearly address the presence of an additional reactor(s) at the site and any resulting impact on government agency emergency planning responsibilities, including the agencies' acknowledgment of the proposed expanded responsibilities. Therefore, the staff concludes that the applicant should provide additional information related to its contacts and arrangements with local government agencies having emergency planning responsibilities within the plume exposure EPZ (as listed above) that addresses their expanded responsibilities associated with an additional reactor(s) at the Clinton site. The staff will determine acceptability of this portion of the ESP application and document its determination in the FSER, based on information the applicant has provided to date and its response to Open Item 13.3-2. The applicant provided other information in the application that is outside the scope of the staff's review of the significant impediments to the development of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3 **Major Features of the Emergency Plans**

13.3.3.1 *Emergency Planning Zones*

13.3.3.1.1 Technical Information in the Application

Section 2.2.1 of the EGC ESP Emergency Plan states that the EPZ boundary of the EGC ESP site is identical to the CPS EPZ boundary, which was defined in 1985 following a detailed review of the demography, topography, characteristics of the land, access routes, and jurisdictional boundaries in the area surrounding the power facility. The review determined that the primary basis for the EPZ boundary definition should be political jurisdictions, strong topographical features (e.g., rivers and mountains), or manmade features (e.g., highways and railroads). The area of the plume exposure EPZ is about 10 miles in radius. Figure 2.2-1 of the EGC ESP Emergency Plan shows the radial boundary of the EGC ESP site plume exposure pathway EPZ.

Section 2.2.2, "Ingestion Pathway Emergency Planning Zone," of the EGC ESP Emergency Plan states that Map E, "Dairies and Food Processing Plants, Water Basins and Public Water Supply Intakes, and Illinois Department of Public Health Medical Facility Map," of IPRA Volume VIII identifies major roads, population centers, and public drinking water system intakes from surface water sources within Illinois that are located within a 50-mile radius of the EGC ESP site. The map also identifies the county boundaries.

13.3.3.1.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i) and 10 CFR 52.18. In its review of the size and configuration of the EPZs, the staff considered the regulatory requirements in 10 CFR 50.33(g), 10 CFR 50.47(c)(2), and 10 CFR Part 50, Appendix E, Sections I, III and IV. According to 10 CFR 52.17(b)(2)(i), an applicant for an ESP may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of a complete and integrated emergency plan. Under 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of the emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information included in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to determining the size and configuration of the EPZs.

Section III.A of Supplement 2 states that an ESP applicant, in proposing major features of the emergency plans, should give special emphasis to the exact sizes of the EPZs. Generally, the 10-mile and 50-mile EPZs consist of an area about 10 miles and 50 miles in radius, respectively. Applicants should determine the exact size and configuration of the EPZs in relation to local emergency response needs and capabilities, as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.

13.3.3.1.3 Technical Evaluation

The applicant has described the exact sizes of the EPZs. The applicant has also described the exact size and configuration of the EPZs in relation to local emergency response needs and capabilities, as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries.

13.3.3.1.4 Conclusions

The staff reviewed the information included in Section 13.3.3.1.1 of this SER related to the exact sizes of the EPZs. The applicant has proposed a plume exposure pathway EPZ of approximately a 10-mile radius and an ingestion pathway EPZ of approximately a 50-mile radius, both of which reflect local emergency response needs and capabilities. Based on its review, the staff concludes that the proposed major feature, which addresses the size and configuration of the EPZs, is consistent with the guidelines in RS-002 and Supplement 2. Therefore, this major feature is acceptable and meets the requirements of 10 CFR 50.33(g), 10 CFR 50.47(c)(2), 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections I, III and IV, insofar as it describes the essential elements of advanced planning that have been considered for the emergency planning zones, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.2 *Assignment of Responsibility (Organization Control) (Major Feature A)*

13.3.3.2.1 Technical Information in the Application

Section 3.1, "Concept of Operation," of the EGC ESP Emergency Plan identifies the Federal, State, local, and private sector organizations that are intended to be part of the overall response organization for EPZs as the NRC, U.S. Department of Energy (DOE), Federal Bureau of Investigation (FBI), U.S. National Weather Service (NWS), the EGC ESP facility organization, the corporate organization, and the public information organization. Section 3.4, "Emergency Response Support and Resources," of the ESP Emergency Plan identifies the support services organizations to the EGC ESP facility as the Institute of Nuclear Power Operations, American Nuclear Insurers, Environmental, Inc., Teledyne Brown Engineering, DOE Radiation Emergency Assistance Center/Training Site (REAC/TS), Murray and Trettel, Inc., ICN Worldwide Dosimetry Service, Framatome Technologies, the future nuclear steam supply system vendor, John Warner Hospital and Ambulance Service, Decatur Memorial Hospital, DeWitt County Sheriff's Department, Clinton Fire Department, IDNS, and IEMA.

Volume I of the IPRA lists the State and local agencies with responsibility for emergency response in Sections F, "Overview, Operational Centers," 1I, "Overview, Utility Emergency Plans," 1J, "Overview, Contiguous States," 2A, "Direction and Control, Office of the Governor," 2B, "Direction and Control, Chain of Command," 3A, "Agency Responsibilities, State Agencies," 3B, "Agency Responsibilities, Federal Agencies," and 3C, "Agency Responsibilities, Private Organizations."

Volume VIII of the IPRA lists the State and local agencies with responsibility for emergency response in Sections 1C, "General Information, Concept of Operations," 1D, "General Information, Participating State Agencies," 2A, "DeWitt County, Functional Summary Descriptions," 2B, "DeWitt County, Initial Contact and Operational Response Levels," 2E, "DeWitt County, Emergency Facilities," and 2F, "DeWitt County, Concept of Operations," and Annexes 2A, "DeWitt County Checklist Procedures," 2B, "Clinton Checklist Procedures," 2C, "Weldon Checklist Procedures," 2D, "Wapella Checklist Procedures," 2E, "DeWitt Village Checklist Procedures," and 2F, "Support County Checklist Procedures."

Volume I of the IPRA describes State and local functions and responsibilities for major elements of emergency response in Sections 1E, "Overview, Basic Functions," 2A, 2B, 3A, 3B, and 3C. Section 2A describes the responsibilities for the Office of the Governor, and Section 3A describes the responsibilities of the 11 State agencies in the event of a radiological emergency at CPS. The State of Illinois has overall command responsibility for radiological and nonradiological aspects of a nuclear incident. Section 1E describes the basic emergency response functions and Section 3A provides the specific duties of each State agency for implementing these basic responsibilities. Section 2B describes the Illinois chain of command. Section 3B notes the responsibilities of Federal agencies, while Section 3C details the American Red Cross responsibilities.

In IPRA Volume VIII, Sections 2A and 2F and Annex 2A identify the major functions to be performed by DeWitt County. In the area of protective actions, DeWitt County would undertake traffic and access control; evacuation support; food, water, and milk control; exposure control; law enforcement; emergency medical services, fire and rescue; and social services. Annex 2F provides the support county functions and responsibilities, and Annexes 2B, 2C, 2D, and 2E provide the functions and responsibilities for the three municipalities and one village in DeWitt County. Tables F.2.c.1 through F.2.c.5 of IPRA Volume VIII relating to DeWitt County, Clinton, Weldon, Wapella, and DeWitt Village, respectively, display agency responsibilities by organization in matrix format.

Section 1A, "Purpose and Authorization," IPRA Volume I, provides the following legal citations to support the activities of IDNS and IEMA in developing and maintaining the IPRA:

- Illinois Emergency Management Agency Act (20 ILCS 3305)
- Directive from Governor James R. Thompson, dated May 17, 1979
- Illinois Nuclear Safety Preparedness Act (420 ILCS 5)
- Department of Nuclear Safety—Powers Enabling Statute (20 ILCS 2005/2005-1)
- Radiation Protection Act of 1990 (420 ILCS 40)
- Illinois Nuclear Facility Safety Act (420 ILCS 10)

IDNS and IEMA are the primary State agencies with responsibilities for responding to a radiological emergency. The IPRA protects the citizens of Illinois in the event of a radiological accident. Other State agencies also have major responsibilities in an emergency, as described in Section 3A of IPRA Volume I.

Section 2F of IPRA Volume VIII states that the principal executive officers of DeWitt County and the risk municipalities are authorized to initiate actions and command emergency personnel in any effort to protect the residents of their jurisdictions by their respective bylaws and charters and by the Illinois Emergency Management Agency Act. In RAI 13.3-13(a), the staff asked the applicant to describe the legal basis (i.e., reference specific acts, codes, or statutes) for county or municipal authorities to comprise part of the overall response organization for the EPZs. In response to RAI 13.3-13(a), the applicant stated that Section 1A of IPRA Volume I describes this legal basis. This authorization document includes the political subdivisions of the State (e.g., the county and municipal authorities). Specifically, one purpose of 20 ILCS 3305/2 is to "confer upon the Governor and upon the principal executive officer of the political subdivisions of the State the powers provided herein."

Section 3.1.1.1.1, "United States Nuclear Regulatory Commission," of the EGC ESP Emergency Plan describes the role of the NRC in the event of an incident. Section 3.1.1.1.4, "United States Department of Energy," of the EGC ESP Emergency Plan describes the role of DOE in the event of an incident. Section 3.1.1.1.6, "Federal Bureau of Investigation," of the EGC ESP Emergency Plan describes the role of the FBI in the event of an incident. Section 3.1.1.1.7, "United States National Weather Service," describes the role of the NWS in the event of an incident. Section 3.1.2, "Applicant Response Organization," describes the applicant's emergency response organization (ERO) that would replace the normal plant organization during an emergency. The ERO will consist of the EGC ESP facility, corporate, and public information response suborganizations. Section 3.4, "Emergency Response Support and Resources," of the EGC ESP Emergency Plan describes the contractors that will be retained to provide supporting services to the EGC ESP facility. The applicant will use a contract/purchase order with a private contractor in lieu of an agreement letter for the specified duration of the contract. Appendix A to the EGC ESP Emergency Plan describes support services under agreements or contracts. For the support services listed in Section 3.4 of the EGC ESP Emergency Plan, the specific contractors may change but the functions will be maintained. The applicant will only ensure that the agreements and contacts with the necessary third parties will be in place when the attributes of this plan need to be in effect.

Section 3.1.1.3, "County Government Agencies," of the EGC ESP Emergency Plan states that the surrounding communities that comprise the plume exposure pathway EPZ have developed integrated emergency response programs that call upon the resources of the community. Section 3.1.1.3 also states that the community organizations will implement and coordinate the community response to an emergency. In addition, Section 3.1.1.3 identifies the surrounding communities as DeWitt, Macon, McLean, and Piatt Counties; the municipalities of Clinton, Wapella, Weldon; and the Village of DeWitt. In RAI 13.3-18, the staff requested a copy of a letter of agreement with the DeWitt County Sheriff's Department that is dated 2003 or later. The applicant provided a copy of such a letter in its response to RAI 13.3-18.

Section 3.2.5 of the EGC ESP Emergency Plan states that written agreements establishing the concept of operations developed between the applicant and its support organizations having an emergency response role within the CPS EPZ have been developed. These arrangements identify the emergency measures to be provided, the mutually accepted criteria for implementation, and the agreements for the exchange of information. Appendix A to the EGC ESP Emergency Plan provides letters of agreement, contracts, and purchase orders between the applicant and the various support organizations having a response role.

Chapter 2, "DeWitt County," in IPRA Volume VIII contains letters signed by the county board chairmen of DeWitt, Macon, McLean, and Piatt Counties, and the mayors of Clinton, Weldon, Wapella, and DeWitt acknowledging these duties, responsibilities, and relationships.

13.3.3.2.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the

applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and I.A. Under 10 CFR 52.17(b)(2)(i), an ESP applicant can propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for the major features of emergency plans, including those that apply to major feature A, "Assignment of Responsibility (Organization Control)."

13.3.3.2.3 Technical Evaluation

As described above, the EGC ESP Emergency Plan, IPRA Volumes I and VIII, and the applicant's response to RAI 13.3-13(a) identify the Federal, State, local, and private sector organizations (including utilities) that are intended to be part of the overall response organization for the EPZs.

Volumes I and VIII of the IPRA identify the functions and responsibilities for major elements of emergency response, such as command and control, alerting and notification, communications, public information, accident assessment, public health and sanitation, social services, fire and rescue, traffic control, emergency medical services, law enforcement, transportation, protective response, and radiological exposure control. In addition, IPRA Volumes I and VIII (by reference to specific acts, codes, or statutes) identifies the legal basis for the State, local, and private sector organizations that are part of the overall response organization for the EPZs to carry out their identified functions and responsibilities.

The EGC ESP Emergency Plan, IPRA Volumes I and VIII, and the response to RAI 13.3-18 adequately describe contacts and arrangements pertaining to the concept of operations developed among Federal, State, and local agencies and other support organizations having an emergency response role within the EPZs. The plan includes letters of agreement. Sections 13.3.2, "Contacts and Arrangements with Local, State, and Federal Agencies," 13.3.3.4, "Emergency Response Support and Resources," 13.3.3.7, "Emergency Communications," 13.3.3.10, "Accident Assessment," and 13.3.3.13, "Medical and Public Health Support," of this SER also describe these contacts and arrangements.

13.3.3.2.4 Conclusions

Based upon the information contained in Section 13.3.3.2.1 of this SER, the staff concludes that the proposed emergency plan major feature A is consistent with the guidance in Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.A., insofar as it describes the essential elements of advanced planning that have been considered for organizational control, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency

plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.3 Onsite Emergency Organizations (Major Feature B)

13.3.3.3.1 Technical Information in the Application

In Section 3.1.2.4, "Interrelationships," of the EGC ESP Emergency Plan, the applicant states that Figures 3.1-1, "Applicant Emergency Response Organization Interrelationships," and 3.1-2, "Agency Response Organization Interrelationships," illustrate the major applicant organizations and suborganizations, as well as government interrelationships, in the total response effort. In RAI 13.3-5, the staff asked the applicant to provide additional information related to ERO interfaces between and among the on-shift emergency response functional areas, local support services, and State and local government response organizations. In its response to RAI 13.3-5, the applicant noted that Figure 3.1-2 in the EGC ESP Emergency Plan provides the interfaces between and among the on-shift emergency response functional areas and local support services. However, Figures 3.1-1 and 3.1-2 do not show specific details for all of the possible interrelationships because they vary with time (e.g., before and after activation of the emergency operations facility (EOF) and the various State and local emergency operations centers (EOCs)) and with the declared level of event (e.g., an unusual event versus a general emergency). For example, for the declaration of an unusual event, the interrelationship occurs directly between the control room and the required State or local service. However, in the latter stages of a general emergency, interrelationships would occur through the established communications paths and generally include the emergency director in the EOF placing a specific request through the State EOC (SEOC).

In general, for significant events, the emergency response functional areas (see "Applicant" in Figure 3.1-2 in the EGC ESP Emergency Plan) interface with the local support services through the EOF and the State and local government response agencies (within their respective EOCs), as shown on Figure 3.1-2 and as discussed in Sections 3.1.2.2, "Corporate Organization," and 3.1.2.5, "Corporate Emergency Director," of the EGC ESP Emergency Plan. Section 3.3.5, "Emergency Response Organization Positional Responsibilities," identifies specific exceptions to this general diagram under the responsibilities for the individual ERO positions. For example, Sections 3.3.5.1.1, "Shift Manager (Shift Emergency Director), Control Room," 3.3.5.1.2, "Station Emergency Director, Technical Support Center," and 3.3.5.2.2, "Corporate Emergency Director, Emergency Operations Director," indicate the command and control functions, which direct these interfaces to cycle through the shift emergency director (in the control room), the station emergency director (in the technical support center (TSC)), and corporate emergency director (in the EOF) as the activation of the organization progresses. The current Figure 3.1-2 best reflects the majority of these permutations by showing the on-shift emergency organization generally as "Applicant" and the State and local agencies and services as "State Agencies" and "County Agencies." Volume VIII of IPRA also addresses this interface. For example, the figure titled, "DeWitt County Initial Notification," in Chapter 2 of IPRA Volume VIII shows the DeWitt County interfaces.

Section 3.2.3, "Non-applicant Nuclear Support Services," and Appendix A to the EGC ESP Emergency Plan, which includes a signature page documenting the annual review of the agreement between CPS and the DeWitt County Sheriff's Department, address an agreement to provide traffic control and law enforcement services.

Sections 3.2.3 and 12.4, "Medical Transportation," as well as Appendix A to the EGC ESP Emergency Plan, describe arrangements that will be made, as necessary, with Clinton Ambulance (John Warner Hospital) for prompt ambulance transport of persons with injuries involving radioactivity to designated hospitals.

Sections 3.2.3 and 12.1, "Off-site Hospital and Medical Services," of the EGC ESP Emergency Plan address arrangements, confirmed by letter of agreement or contract every 2 years, that will be maintained with a qualified hospital located in the vicinity of the EGC ESP facility for receiving and treating contaminated or exposed persons with injuries requiring immediate hospital care. The applicant identifies John Warner Hospital in Clinton, Illinois, as the primary supporting medical facility for injured persons who are contaminated with radioactivity. Appendix A to the EGC ESP Emergency Plan includes a letter of agreement with the hospital.

Section 3.2.3 and Appendix A to the EGC ESP Emergency Plan identify arrangements with Decatur Memorial Hospital to act as a supporting medical facility and provide medical services. Appendix A to the application includes a letter of agreement with the hospital.

Section 3.2.3 and Appendix A to the EGC ESP Emergency Plan identify arrangements with the Clinton Fire Department to provide fire protection services and confined space rescue operations. Appendix A includes a copy of a letter of agreement with the Clinton Fire Department to provide fire response support.

13.3.3.3.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.A. Under 10 CFR 52.17(b)(2)(i), an ESP applicant can propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information included in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those that apply to major feature B, "Onsite Emergency Organizations."

13.3.3.3.3 Technical Evaluation

As discussed above, the applicant has identified, in the EGC ESP Emergency Plan and in its response to RAI 13.3-5, the interfaces between and among the onsite functional areas of

emergency activity, local services support, and State and local government response organizations.

The applicant has also identified in the EGC ESP Emergency Plan the services to be provided by local agencies for handling emergencies (e.g., police, ambulance, medical, hospital, and firefighting organizations). The EGC ESP Emergency Response Plan adequately describes the arrangements involving these services. The applicant also includes written letters of agreement.

13.3.3.3.4 Conclusions

Based upon the information contained in Section 13.3.3.3.1 of this SER, the staff concludes that the proposed major feature B is consistent with the guidance in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.A., insofar as it describes the essential elements of advanced planning that have been considered for the onsite emergency response organization, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of the applicant's emergency plan and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.4 Emergency Response Support and Resources (Major Feature C)

13.3.3.4.1 Technical Information in the Application

Section 3.4.5, "United States Department of Energy Radiation Emergency Assistance Center/Training Site," of the EGC ESP Emergency Plan states that the DOE REAC/TS will provide services of medical and health physics support. The applicant has made provisions for requesting assistance from the DOE REAC/TS through a letter of agreement, as noted in Appendix A to the EGC ESP Emergency Plan.

Section 3.1.1.1.7, "United States National Weather Service," of the EGC ESP Emergency Plan states that the NWS provides meteorological information during emergency situations, if required by 15 CFR 950.3. Therefore, no special provisions for requesting assistance are needed.

Section 3.1.1.1.4, "United States Department of Energy," describes the applicant's procedure for seeking assistance from DOE, as outlined in the Federal Radiological Monitoring and Assessment Plan.

Sections 3A(8), "Illinois Department of Nuclear Safety," and 3B in IPRA Volume I provide the State's procedures for requesting Federal assistance. The IDNS is authorized to request Federal assistance depending on the severity of a radiological incident, as outlined in the Federal Radiological Emergency Response Plan (FRERP) and in the Radiological Assistance Program.

Section 3.4.3, "Environmental, Inc.," of the EGC ESP Emergency Plan states that the applicant will rely on Environmental, Inc. to provide radiological environmental monitoring services in an emergency situation. In addition, Section 3.4.5, "United States Department of Energy Radiation

Emergency Assistance Center/Training Site,” states that the DOE REAC/TS will provide medical and health physics support services. The REAC/TS will also provide advice on the health physics aspects of situations requiring medical assistance. Section 3.4.7, “ICN Worldwide Dosimetry Service,” of the EGC ESP Emergency Plan states that ICN Worldwide Dosimetry Service will provide extremity dosimetry services. In an emergency, ICN Worldwide Dosimetry Service will also provide additional dosimetry to the affected nuclear facility and EOF. Section 3.4.8, “Framatome Technologies (Post-accident Sample Analysis Program),” of the EGC ESP Emergency Plan states that Framatome Technologies (Post-accident Sample Analysis Program) will maintain its hot-cell in a state of readiness so that a sample analysis can be completed within 24 hours of sample receipt.

Section 3A(8) in IPRA Volume I provides the State’s procedures for requesting Federal assistance. IDNS is authorized to request Federal assistance depending on the severity of a radiological incident, as outlined in the FRERP and in the Radiological Assistance Program. In RAI 13.3-13(b), the staff requested a description of the general capabilities of radiological laboratories (besides the two IDNS mobile laboratories) to provide radiological monitoring and analyses services. In response to RAI 13.3-13(b), the applicant stated that Section E1 in IPRA Volume 1 describes the general capabilities of radiological laboratories (besides the two IDNS mobile laboratories). These labs include the IDNS lab in Springfield and the laboratories to be provided by the Federal government under the FRERP.

Section 3.4 “Emergency Response Support and Resources” of the EGC ESP Emergency Plan states that the applicant will retain contractors to provide supporting services to the EGC ESP Facility. Section 3.4 also describes the support services available under the agreements or contracts listed in Appendix A to the EGC ESP Emergency Plan. The applicant further states that, for the support services listed in Section 3.4, the specific contractors may change but the functions will be maintained.

Section 2F of IPRA Volume VIII provides matrices of the DeWitt County and participating municipality emergency response agencies and all of the State, local, and private agency organizations which are expected to play an active role in an emergency. Section 2J, “DeWitt County, Evacuation Plan,” of IPRA Volume VIII briefly summarizes the evacuation plan and the agencies responsible for different aspects of the evacuation. Section 3D, “Sheltering Guide, Registration Centers and Congregate Care Shelter Spaces,” of IPRA Volume VIII lists the registration centers and congregate care shelters. Appendix D, “Registration Centers and Congregate Care Shelters,” to IPRA Volume VIII is a list of the registration centers and congregate care centers, while Appendix E, “Shelter Profiles,” to IPRA Volume VIII is a compilation of the sheltering profiles (i.e., the location, contact number, and amenities of the congregate care centers). Map C in IPRA Volume VIII displays the location of the registration centers and congregate care shelters in relation to the EPZ.

13.3.3.4.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant’s emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the

applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.B., and IV.D. Under 10 CFR 52.17(b)(2)(i), an applicant for an ESP may propose major features of the emergency plans that can be reviewed and approved by the NRC, in consultation with FEMA, in the absence of complete and integrated emergency plans. As required by 10 CFR 52.18, after consultation with FEMA, the staff will determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information included in an ESP application. Supplement 2 also provides specific evaluation criteria for the major features of emergency plans, including those which apply to major feature C, "Emergency Response Support and Resources."

13.3.3.4.3 Technical Evaluation

The Federal Government maintains an in-depth capability to assist licensees, States, and local governments through the FRERP. The ESP application adequately addresses provisions for requesting Federal assistance through the EGC ESP Emergency Plan and IPRA Volume I.

The EGC ESP Emergency Plan, IPRA Volumes I and VIII, and the response to RAI 13.3-13(b) have identified radiological laboratories, their general capabilities, and their expected availability to provide radiological monitoring and analytical services during an emergency. The EGC ESP Emergency Plan and IPRA Volumes I and VIII also identify nuclear and other facilities and organizations that can provide assistance in an emergency. In addition, the EGC ESP Emergency Plan describes the contacts and arrangements the applicant has made with the response organizations identified in Section 13.3.3.2.1 of this SER.

13.3.3.4.4 Conclusions

Based upon the information contained in Section 13.3.3.4.1 of this SER, the staff concludes that the applicant's proposed major feature C "Emergency Response Support and Resources" is consistent with the guidance in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., and IV.D., insofar as it describes the essential elements of advanced planning that have been considered for emergency response support and resources, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.5 *Emergency Classification System (Major Feature D)*

13.3.3.5.1 Technical Information in the Application

Sections 4.1, "Unusual Event," 4.2, "Alert," 4.3, "Site Area Emergency," and 4.4, "General Emergency," of the EGC ESP Emergency Plan identify four emergency classes: unusual event, alert, site area emergency, and general emergency, respectively.

Section 1C, "Overview, Accident Classification," of IPRA Volume I states that the emergency classification scheme to be used in the event of an emergency would include unusual event, alert, site area emergency, and general emergency. The applicant's four classifications, as defined in the EGC ESP Emergency Plan, are consistent with these.

Section 1C of IPRA Volume VIII also provides a listing of the four emergency classification levels, unusual event, alert, site area emergency, and general emergency. The applicant's scheme is consistent with this listing as well.

13.3.3.5.2 Regulatory Evaluation

In Section 1.1, of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.C. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans that the NRC can review and approve, in consultation with FEMA, in the absence of complete and integrated emergency plans. As required by 10 CFR 52.18, after consultation with FEMA, the staff will determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information included in an ESP application. Supplement 2 also provides specific evaluation criteria for the major features of emergency plans, including those that apply to major feature D, "Emergency Classification System."

13.3.3.5.3 Technical Evaluation

The applicant has established an emergency classification scheme comprising four categories: unusual event, alert, site area emergency, and general emergency. These four categories meet the guidance in Appendix 1 to NUREG-0654/FEMA-REP-1, Revision 1. The applicant's scheme also includes a fifth emergency class (Recovery), as stated in Section 4.5, "Recovery," of the EGC ESP Emergency Plan, which the staff did not regard as essential to its review and, therefore, did not consider it. The applicant's emergency classification scheme is consistent with that established in Volumes I and VIII of IPRA.

13.3.3.5.4 Conclusions

Based upon the information contained in Section 13.3.3.5.1 of this SER, the staff concludes that the proposed major feature D is consistent with the guidance in RS-002 and Supplement 2. Therefore, it is acceptable and meets the relevant requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.C., insofar as it describes the essential elements of advanced planning that have been considered for the emergency classification system, as set forth above. The applicant provided other information in the

application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.6 Notification Methods and Procedures (Major Features E)

13.3.3.6.1 Technical Information in the Application

In Section 5.1, "Bases for Emergency Response Organization Notification," of the EGC ESP Emergency Plan, the applicant states that, in cooperation with the State of Illinois and county authorities, it has established mutually agreeable methods and procedures for notifying offsite response organizations consistent with the action level scheme discussed in the previous section. These methods and procedures apply to CPS and other Exelon facilities within the State of Illinois.

Sections 1D, "Overview, Operational Response Levels," 3A, and 4A, "Communications, Nuclear Accident Reporting System," in IPRA Volume I list procedures for the notification of State agencies and local communities based on emergency classification levels.

Sections 1C, 1D, and 2B, and Annexes 2A, 2B, 2C, 2D, 2E, and 2F of IPRA Volume VIII describe detailed notification procedures, based on the CPS and State emergency classification levels, for the counties and risk municipalities.

Sections 5.2.1, "On-site," 5.2.2, "Off-site," and 5.2.3, "Support Organizations," of the EGC ESP Emergency Plan describe the methods for alerting, notifying, and mobilizing onsite, offsite and support organization emergency response.

Sections 3A, 4B, "Communications, Nuclear Accident Reporting System," 4C, "Communications, IDNS Radio Network," and 4D, "Communications, State Agency Communications Networks," in IPRA Volume I provide the procedures that the agencies of the State of Illinois use to mobilize and activate emergency response personnel. Sections 3A(3), "Agency Responsibilities, State Agencies, Illinois Emergency Management Agency," and 3A(8) in IPRA Volume I state that the IEMA and the IDNS, respectively, receive notification of an unusual event concurrently from CPS through the nuclear accident reporting system (NARS). As described in Section 3A of IPRA Volume I, each agency has procedures to mobilize staff by commercial telephone, pager, or radio and activation commensurate with his or her responsibilities in an emergency. The IEMA notifies the county and municipal governments as appropriate via NARS.

Sections 1C, 1D, 2B, 2C, "DeWitt County, Call List," and 2D, "DeWitt County, Flow Diagram Notes for DeWitt County Initial Notification," and Annexes 2A, 2B, 2C, 2D, 2E, and 2F of IPRA Volume VIII provide specific mobilization and activation procedures for the counties and municipalities within the plume exposure pathway EPZ.

Section 5.5, "State and County Information Dissemination," of the EGC ESP Emergency Plan explains that the State of Illinois and county emergency response plans include procedures for how State and county officials should make a public notification decision promptly (within about 15 minutes) once the plant has informed them of an emergency. Currently, the applicant's system for disseminating information to the public includes notification by prescribed messages

through appropriate broadcast media, such as the emergency alert system (EAS). Subsections 5.5.1, "Notification of the Public," and 5.5.2, "Messages to the Public," describe dissemination systems that are already in service and will be used for a future EGC ESP facility.

Section 1G, "Overview, Notification of the Public," of IPRA Volume I discusses activation of the alert notification sirens, deployment of emergency service vehicles, and operation of the EAS. The electronic and mechanical sirens emit a blast and have voice capabilities. The siren system, supplemented by mobile public address (PA) systems, provides coverage to essentially 100 percent of the plume exposure EPZ. After the sounding of the sirens or notification by mobile units, radio broadcast informs members of the public within the plume exposure pathway EPZ of what actions to take.

Section 2A, "DeWitt County, Functional Summary Descriptions," in IPRA Volume VIII specifies that DeWitt County activates the alert notification sirens upon instruction from IEMA. The county prepares messages, provided in the annexes, to be sent out over the EAS, once approved by IEMA.

13.3.3.6.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the EGC ESP Emergency Plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2, "Planning Standards and Evaluation Criteria," of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.D. Under 10 CFR 52.17(b)(2)(i), an applicant for an ESP may propose the major features of the emergency plans that the NRC can review and approve, in consultation with FEMA, in the absence of complete and integrated emergency plans. As required by 10 CFR 52.18, after consultation with FEMA, the staff will determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in ESP applications. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to major feature E, "Notification Methods and Procedures."

13.3.3.6.3 Technical Evaluation

The EGC ESP Emergency Plan and IPRA Volumes I and VIII describe a mutually agreeable basis for the notification of response organizations which is consistent with the emergency classification scheme set forth in Appendix 1 to NUREG-0654/FEMA-REP-1, Revision 1. These documents also describe a method for alerting, notifying, and mobilizing emergency response personnel. In addition, the EGC ESP Emergency Plan and IPRA Volumes I and VIII describe

the administrative and physical means for notifying and promptly instructing the public within the plume exposure pathway EPZ.

13.3.3.6.4 Conclusions

Based upon the information contained in Section 13.3.3.6.1 of this SER, the staff concludes that the proposed major feature E, "Notification Methods and Procedures," is consistent with the guidance in RS-002 and Supplement 2. Therefore, it is acceptable and meets the relevant requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.D., insofar as it describes the essential elements of advanced planning that have been considered for notification methods and procedures, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.7 *Emergency Communications (Major Feature F)*

13.3.3.7.1 Technical Information in the Application

Section 6.1, "Communications/Notifications," of the EGC ESP Emergency Plan states that, for the EGC ESP facility, the applicant will maintain the capability to make initial notifications to the designated offsite agencies on a 24 hour per day basis. The offsite notification system, referred to as the NARS, is a dedicated communications system that links the facility control room, EOF, TSC, and State and local authorities. Facsimile and commercial telephone lines will back up the NARS. State and county warning points will be continuously staffed. In addition, the applicant has established several dedicated communication systems that will ensure reliable and timely exchange of information necessary to the effective command and control of any emergency response. This includes information (1) between EGC and State and local agencies within the EPZs, (2) between EGC and the Federal EROs, (3) between the plant, the EOF, and the State and county EOCs, and (4) between the emergency response facilities (ERFs) and field monitoring teams. In addition, facility communication links will exist to ensure appropriate information transfer capabilities during an emergency. The facility may also use PA systems, facility radios, and pagers to augment its communication capabilities.

Sections 3A(3), 3A(8), and 4A of IPRA Volume I identify NARS as the primary source of communications among the ESP site, State agencies, and local governments. Commercial telephones will be used for confirmation. No State, other than Illinois, is located within the EPZ of the EGC ESP site.

Section 2G, "DeWitt County, Communications," in IPRA Volume VIII specifies the communications systems utilized by DeWitt County (NARS and telephone). Annexes 2A, 2B, 2C, 2D, 2E, and 2F of IPRA Volume VIII specify the communications systems used by DeWitt County, the risk municipalities, and the support counties.

Section 6.3, "USNRC Communications (Emergency Notification System and Health Physics Network)," in the EGC ESP Emergency Plan states that the applicant will install dedicated telephone equipment between the EGC ESP facility's control room and the NRC, with an extension of that line into the TSC. The EOF will have available a separate line capable of

being patched into the facility through the NRC. The NRC will use this line for event notifications and status updates.

A separate dedicated telephone, the health physics network (HPN), will also be available to convey health physics information to the NRC from the TSC and EOF, as requested. This telephone can also be used as an open line. The NRC will direct the installation and the use of its own telephones, as indicated in Figure 6.1-3, "USNRC Communications for Nuclear Response."

Section 6.1.8, "Emergency Response Data System," of the EGC ESP Emergency Plan states that the Emergency Response Data System (ERDS) will supply the NRC with selected plant data points on a near-real time basis. The ERO will activate the ERDS as soon as possible, but no later than 1 hour after declaration of an alert, a site area emergency, or a general emergency. The selected data points will be transmitted via modem to the NRC at approximately 1-minute intervals.

Section 2B of IPRA Volume I lists some of the Federal agencies that may be needed in the event of an incident at a nuclear plant. Section 3A(8) of IPRA Volume I describes the duties of IDNS in an emergency, including the responsibility for contacting the appropriate Federal agencies whenever an accident more severe than an alert is reported. Section 3A(8) also references the FRERP and Radiological Assistance Program. In RAI 13.3-13(c), the staff requested a description of the provisions for prompt communications between the State and Federal EROs. In response to RAI 13.3-13(c), the applicant stated that Section F1(1), "Overview, Operations Centers, State Emergency Operations Center," and Section 2B of IPRA Volume 1 describe the provisions for communications between Federal and State EROs. Section 6A, "Preparedness Functions, Exercises and Drills," of IPRA Volume I and Section 1C of IPRA Volume VIII also discuss these communications provisions. Section 3A(8) of IPRA Volume I indicates that Radiation Emergency Assistance Center (REAC) will contact the Federal agencies and Section 3B of IPRA Volume I states that the Governor or his designee is authorized to request Federal assistance.

The applicant stated that the shift manager will be responsible for initiating a call-out to activate the ERO. The applicant will use an automated notification system to rapidly notify members of the ERO. The system, in use at the CPS and planned for use at the EGC ESP facility, consists of a computer with modem equipment capable of initiating and receiving telephone calls. When contact is made, the system will automatically request security identification and then respond. The system will call the paging system vendor. The pager vendor's system will accept group and individual numbers from the ERO notification system, activating several radio transmitters which in turn will activate personal pagers belonging to members of the ERO. The system will incorporate redundant power, phone, and computer components with geographic separation. Implementing procedures will specify the course of action to be taken should the ERO notification system fail. In case of system failure, facility personnel will manually activate the ERO group page feature and/or directly call-out key emergency response personnel.

Section 3A of IPRA Volume I contains a list of State agencies and gives details of the notification process for their staffs.

Sections 1C and 1D of IPRA Volume VIII state that DeWitt County receives initial notification from IEMA via NARS and notifies the risk municipalities and support counties. Annexes 2A, 2B,

2C, 2D, 2E, and 2F of IPRA Volume VIII detail the emergency personnel notification procedures of DeWitt County, local municipalities, and support counties.

Section 6.4, "Medical Communications," of the EGC ESP Emergency Plan states that communications will be established with the primary and backup medical hospitals described in Section 12.1, "Off-site Hospital and Medical Services," of the plan. Facility personnel will establish communications with medical transportation services via commercial telephone lines.

Section 3A(9), "Agency Responsibilities, State Agencies, Public Health," of IPRA Volume I describes the IDPH communications as relying on an emergency management system using radio, telephone, or telemetry. The system links the IDPH to hospitals, ambulances, and other emergency vehicles.

Section 2G and Annexes 2A, 2B, 2C, 2D, 2E, and 2F of IPRA Volume VIII state that the John Warner Hospital representative at the DeWitt County EOC is responsible for communicating with the hospital and arranging for ambulance support (Annex 2B), although the means of communication are not specified. The DeWitt County EOC will coordinate medical support for risk counties and municipalities.

13.3.3.7.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.D., and IV.E. Under 10 CFR 52.17(b)(2)(i), an applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of a complete and integrated emergency plan. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to major feature F, "Emergency Communications."

13.3.3.7.3 Technical Evaluation

The staff reviewed the applicant's response to RAI 13.3-13(c) and found it to be acceptable based on the evaluation below.

The communication plans for emergencies described in the EGC ESP Emergency Plan and IPRA Volumes I and VIII have provisions for communications among contiguous State/local governments within the EPZ, and, as needed, with Federal EROs. In addition, these

communication plans for emergencies have provisions for alerting and activating emergency personnel in each response organization. Finally, the plans describe the communication arrangement for fixed and mobile medical support facilities.

13.3.3.7.4 Conclusions

Based upon the information contained in Section 13.3.3.7.1 of this SER, the staff concludes that the proposed major feature F, "Emergency Communications," is consistent with the guidelines in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.D., and IV.E., insofar as it describes the essential elements of advanced planning that have been considered for emergency communications, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of the emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.8 Public Education and Information (Major Feature G)

13.3.3.8.1 Technical Information in the Application

Section 7.1, "Public Information Publication," of the EGC ESP Emergency Plan explains that the State has an overall responsibility to maintain a continuing disaster preparedness public education program. Section 7.1 also states that the emergency public information publication for the applicant's generating facilities is and will be updated annually, in coordination with State and county agencies, to address how the general public is notified and what their actions should be in an emergency. The applicant also states that it will distribute the EGC ESP site-specific publication on an annual basis by mail to residents within the 10-mile plume exposure pathway EPZ, as well as to appropriate locations where the transient population may obtain a copy.

Section 7.2, "Public Education Materials," of the EGC ESP Emergency Plan states that public information publications will instruct members of the public to go indoors and turn on their radios when they hear the alert notification sirens operating. These publications will also identify the local radio stations that the public should listen to for emergency-related information.

Sections 7.1 and 7.2 of the EGC ESP Emergency Plan state that the public information publication will include educational information on radiation, a description of the events that require public notification and what to do if a "take shelter" or "evacuate" recommendation is given, a map of major evacuation routes, a list of communities likely to serve as host shelter areas, and instructions on how to obtain additional information, especially for the disabled or their caretakers and those without transportation. In addition, the publication should include an address, telephone number, and email address to contact for further information. In RAI 13.3-7, the staff requested that the applicant provide the respiratory protection information included in its emergency information program. In its response to RAI 13.3-7, the applicant stated that the public information publications for CPS currently provide respiratory protection information. These publications address respiratory protection information by providing general radiation information, actions to be taken for a "shelter-in-place" recommendation, and contacts for additional information. The current "shelter-in-place" actions include the following

statements regarding respiratory protection (i.e., protective measures) consistent with Section 5.5.2 of the EGC ESP Emergency Plan:

Go indoors and stay there. Close all doors and windows and shut off any systems that draw in outside air, such as furnaces, fireplaces and air conditioners.

As indicated in Section 16.4, "Emergency Plan and Agreement Revisions," of the EGC ESP Emergency Plan, when an application for a COL references the EGC ESP Emergency Plan pursuant to 10 CFR Part 52, Subpart C, it is anticipated that the application will incorporate the EGC ESP Emergency Plan into the Exelon nuclear standardized radiological emergency plan in effect at that time, including, in an appropriate annex, the addition of plant-specific information associated with the EGC ESP facility. Along with the adoption of the Exelon nuclear standard radiological emergency plan, the COL facility will adopt consistent public information publications and distribution practices.

Section 5C, "Public Information," of IPRA Volume I describes a program whereby the State of Illinois, the operating utilities, and the affected county governments distribute informational booklets on an annual basis. The State coordinates this activity with the utility as described in Section 7.1 of the EGC ESP Emergency Plan. The public information booklets, "Emergency Information," are distributed by mail to the public residing within the 10-mile EPZ. Utility billing records or zip codes are used to compile distribution lists and are updated annually. In addition to direct mailing, booklets are available to transients and EPZ visitors at area motels, health care facilities, recreational areas, and other public areas.

Section 2K, "DeWitt County, Public Information Considerations," in IPRA Volume VIII indicates that the emergency information booklet includes instructions on how to obtain additional information, instructions to follow if shelter-in-place or evacuation is recommended, educational information concerning radiation, a map of major evacuation routes and a list of communities that are likely to serve as host communities for evacuees. The booklet also contains information that is used to identify persons within the EPZ who have special concerns related to their ability to follow protective actions. These special concerns include hearing and walking difficulties, transportation issues, and special medical needs.

Section 7.5, "Media Orientation," of the EGC ESP Emergency Plan states that the applicant's Mid-west Regional Operating Group (MWROG) Emergency Preparedness Department, in conjunction with the Communications and Public Affairs Department, will annually provide the applicable news media with information concerning the emergency plan, radiation, and points of contact for release of public information in an emergency.

Section 5D, "Public Information, Media Education," in IPRA Volume I and Section 2K in IPRA Volume VIII describe the program for acquainting the media with the emergency plans, information concerning radiation, and points of contact for release of public information in an emergency. To acquaint the news media with the IPRA, information is provided annually to the media in the vicinity of each nuclear power station. Information is provided by a briefing session, participation in an IPRA exercise, or a mailing of informational material. Any one of these three methods provides information on the IPRA concept of operations, accident

classification scheme, communications, protective actions, parallel actions, public information, and the EPZ.

In RAI 13.3-13(d), the staff requested a description of the State and local programs for acquainting news media with emergency plans, information concerning radiation, and points of contact for the release of public information in an emergency. In response to RAI 13.3-13(d), the applicant stated that Section 5D in IPRA Volume 1 provides a description of the State and local programs for acquainting news media with emergency plans, information concerning radiation, and points of contact for the release of public information in an emergency.

13.3.3.8.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.D., IV.E., and IV.F. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. As required by 10 CFR 52.18, after consultation with FEMA, NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those that apply to major feature G, "Public Education and Information."

13.3.3.8.3 Technical Evaluation

The staff reviewed the applicant's response to RAIs 13.3-7 and 13.3-13(d) and found them to be acceptable based on the evaluation below.

The EGC ESP Emergency Plan and IPRA Volumes I and VIII describe programs to provide a coordinated dissemination of information to members of the public on a periodic basis (at least annually) regarding how they will be notified and what their actions should be in an emergency. The programs described in State and local emergency plans include information on the following:

- educational information on radiation
- contact for additional information
- protective measures (e.g., evacuation routes, relocation centers, and sheltering)
- special needs of the handicapped, transient population, and special facilities

The EGC ESP Emergency Plan and IPRA Volumes I and VIII adequately describe a program for acquainting the news media on a periodic basis (at least annually) with emergency plans, information concerning radiation, and points of contact for release of public information in an emergency.

13.3.3.8.4 Conclusions

Based upon the information contained in Section 13.3.3.8.1 of this SER, the staff concludes that the proposed major feature G, "Public Education and Information," is consistent with the guidelines in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.D., IV.E., and IV.F., insofar as it describes the essential elements of advanced planning that have been considered for emergency public education and information, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.9 *Emergency Facilities and Equipment (Major Feature H)*

13.3.3.9.1 Technical Information in the Application

Section 8.1.2, "Technical Support Center," of the EGC ESP Emergency Plan states that a TSC will be established for use during emergency situations by facility management, technical, and engineering support personnel. The TSC will be activated for emergencies classified as an alert or higher. Activation for other events will be optional. When activated, the TSC functions will include the following:

- supporting the control room's emergency response
- performing the nondelegable functions when in command and control
- continual evaluation of event classification
- assessing the plant status and potential offsite impact
- coordinating emergency response actions
- notifying appropriate corporate and station management
- providing notification and update information to the NRC via the emergency notification system (ENS), including activation of ERDS

The TSC will be the onsite location used to support the control room for assessment of plant status and potential offsite impact, as well as for the implementation of emergency actions. The TSC will provide technical data and information to the EOF.

The TSC will provide reliable voice communications to the control room, operations support center (OSC), EOF, the NRC, and State and local EOCs. In addition, the TSC will provide facsimile transmissions capability, as described in Chapter 6, "Emergency Communications," in the EGC ESP Emergency Plan.

The TSC will be sized for a minimum of 25 spaces and supporting equipment. Of the 25 spaces, 5 will be reserved for the NRC, and adequate space will be available for the appropriate State representative(s). Under accident conditions, personnel in the TSC will be protected from radiological hazards, including direct radiation and airborne contaminants, with

similar radiological habitability as the control room personnel. To ensure adequate radiological protection, permanent radiation monitoring systems will be installed in the TSC and/or periodic radiation surveys will be conducted. These systems will be used to indicate radiation dose rates and airborne radioactivity inside the TSC. In addition, protective breathing apparatus (full-face air purifying respirators) and potassium iodide (KI) will be available for use as required. The TSC will have access to a complete set of as-built drawings and other records, including general arrangement diagrams, piping and instrumentation drawings, and the electrical schematics. The TSC will have the capability to record and display vital plant data, in real time, to be used by knowledgeable individuals responsible for engineering and management support of reactor operations and for implementation of emergency procedures.

Section 8.1.3, "Operations Support Center," in the EGC ESP Emergency Plan states that facility support personnel will report to the OSC, an onsite location used during an emergency. Assignments or duties will be dispatched in support of emergency operations. The OSC shall be activated whenever the TSC is activated, but the OSC need not remain activated at the alert level if the station emergency director judges it to be unnecessary. At the site area and general emergency levels, the OSC or an alternate OSC will be activated at all times. Activation for other events will be optional. Station disciplines reporting to the OSC will include, but not be limited to, the following:

- operating personnel not assigned to the control room
- radiation protection personnel
- chemistry personnel
- maintenance personnel (mechanical, electrical, and instrumentation and control)

The OSC will be equipped with communication links to the control room, TSC, and EOF, as described in Chapter 6 of the EGC ESP Emergency Plan. A limited inventory of supplies will be kept in the OSC. This inventory will include respirators, protective clothing, flashlights, and portable survey instruments.

Sections 8.1.2 and 8.1.3 of the EGC ESP Emergency Plan provide brief, general statements and do not give facility-specific or equipment-specific information. In RAI 13.3-12, the staff requested the applicant to discuss the extent to which it intended the application to address evaluation criteria V.H.1 and V.H.2 of Supplement 2 for the TSC, OSC, and EOF, including whether it intended the application to address NUREG-0696, "Functional Criteria for Emergency Response Facilities—Final Report," dated February 1981. In addition, the staff asked the applicant to state whether Exelon intends to utilize the existing TSC, OSC, and EOF, which support CPS, for the ESP site. In response to RAI 13.3-12, the applicant stated that the EGC ESP Emergency Plan addresses evaluation criterion V.H.1 of Supplement 2 in Section 8.1 which provides the full ESP discussion of the major features of the TSC and OSC; including the NUREG-0696 criteria applicable for a major features discussion. Because the COL application is expected to reference a certified design that has already addressed the details of the design of these facilities, Exelon did not include them in the ESP application. The specific designs vary and, thus, providing these details in the ESP application could result in discrepancies with the to-be-selected certified design. The COL application will address any details not included in the combined to-be-referenced ESP and design certification document. The EGC ESP facility does not intend to use the TSC or OSC that support the existing Clinton unit and, thus, there will be no impact from the new facility on the existing CPS TSC and OSC. Section 8.2, "Emergency Operations Facility," of the EGC ESP Emergency Plan address evaluation criterion V.H.2 of

Supplement 2. Section 8.2 provides a full discussion of the major features of the EOF; including the NUREG-0696 criteria applicable for a major features discussion. The applicant also states that, as indicated in Section 8.2, the EGC ESP facility intends to use the existing common EOF currently located in the Exelon Cantera Facility in Warrenville, Illinois. This facility supports the existing Clinton unit, as well as other existing units in Illinois, and has been previously evaluated against the NUREG-0696 criteria. Since the EOF is already established to support numerous nuclear facilities, the only impact is incorporating the appropriate documents and any necessary communication inputs. Thus, including the EGC ESP facility in the existing EOF is expected to have minimal impact. Completion of the activities associated with these impacts will occur at the COL stage and these and other NUREG-0696 criteria can be readily confirmed by inspection at that time (consistent with the process utilized for the previously licensed facilities).

Section 8.2 of the EGC ESP Emergency Plan states that the EOF will be the location where the corporate emergency director will direct a staff to evaluate and coordinate the overall company activities involved with an emergency. Activation of the EOF is mandatory upon declaration of an alert or higher classification. The EOF will provide for the management of overall emergency response, the coordination of radiological and environmental assessments, the determination of recommended public protective actions, the management of recovery operations, and the coordination of emergency response activities with Federal, State, and local agencies. The common MWROG EOF is currently (i.e., in 2003) located in the applicant's Cantera Facility, west of Chicago, in Warrenville, Illinois. The EOF was designed with the following considerations in mind:

- The location provides optimum functional and availability characteristics for carrying out the overall strategic direction of the applicant's onsite and support operations, determining public protective actions to be recommended to offsite officials, and coordinating with Federal, State, and local organizations.
- The EOF is well engineered and of sufficient size to accommodate about 50 people.
- The EOF is equipped with reliable voice communications capabilities to the TSC, OSC, control room, NRC, and State and local EOCs. In addition, the EOF has facsimile transmission capability.
- Equipment is provided to gather, store, and display data needed in the EOF to analyze and exchange information on plant conditions with the facility. The EOF technical data system receives, stores, processes, and displays information sufficient to perform assessments of the actual and potential onsite and offsite environmental consequences of an emergency condition.
- The EOF has (and will have for the EGC ESP facility) ready access to plant records, procedures, and emergency plans needed for effective overall management of the applicant's emergency response resources.

Section 1F(1), "Overview, Operations Centers," in IPRA Volume I fully describes the SEOC and its use in directing and controlling response functions. The IPRA describes the role of IEMA in coordinating and directing response, the State agencies participating at the SEOC, agency

roles, physical characteristics of the facility, and communications systems. The SEOC operations can also be conducted from the State forward command post (SFCP).

Sections 1C and 2E in IPRA Volume VIII describe the county and municipality emergency response functions that take place at the DeWitt County EOC. Volume VIII of IPRA describes the location and operation of the EOC in coordinating county and municipal response and in coordinating with the SEOC or the SFCP.

13.3.3.9.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and Appendix E to 10 CFR Part 50, Sections III, IV.B., and IV.E. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including that which are applicable to major feature H, "Emergency Facilities and Equipment."

Major feature H requires the applicant to describe a TSC, onsite OSC, and EOF, in accordance with NUREG-0696. The following provides the general guidance criteria from NUREG-0696 for these facilities:

- The TSC is an onsite facility located close to the control room that shall provide plant management and technical support to the reactor operating personnel located in the control room during emergency conditions. It shall have technical data displays and plant records available to assist in the detailed analysis and diagnosis of abnormal plant conditions and any significant release of radioactivity to the environment. The TSC shall be the primary communications center for the plant during an emergency.
- The OSC is an onsite assembly area separate from the control room and the TSC where licensee operations support personnel shall report in an emergency. There shall be direct communications between the OSC and the control room, and between the OSC and the TSC, so that the personnel reporting to the OSC can be assigned to duties in support of emergency operations.
- The EOF is a near-site support facility for the management of the overall licensee emergency response (including coordination with Federal, State, and local officials),

coordination of radiological and environmental assessments, and determination of recommended public protective actions. The EOF shall have appropriate technical data displays and plant records to assist in the diagnosis of plant conditions to evaluate the potential or actual release of radioactive materials to the environment.

In addition, major feature H calls for the application to describe an EOC for each offsite organization, for use in directing and controlling response functions.

13.3.3.9.3 Technical Evaluation

The staff finds that the application adequately describes the State and local EOCs for use in directing and controlling response actions.

In Sections 8.1.2, 8.1.3, and 8.2 of the EGC ESP Emergency Plan, the applicant provides general descriptions of the OSC, TSC, and EOF and equipment. With regard to RAI 13.3-12, in order for the staff to determine whether major feature H is acceptable, the applicant needs to address the adequacy of the facilities and related equipment in support of emergency response, and to address with specificity, such facility and equipment areas as location, size, structure, function, habitability, communications, staffing and training, radiological monitoring, instrumentation, data system equipment, power supplies, technical data and data systems, and record availability and management. This is **Open Item 13.3-3**.

13.3.3.9.4 Conclusions

As discussed above, the applicant needs to provide an adequate description of emergency facilities and equipment for the TSC, OSC, and EOF, consistent with the guidance in RS-002 and Supplement 2 (i.e., Supplement 2, evaluation criteria H.1 and H.2). The NRC and FEMA will determine whether this major feature is acceptable and document its determination in the FSER, based on information the applicant has provided to date and its response to Open Item 13.3-3. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.10 Accident Assessment (Major Feature I)

13.3.3.10.1 Technical Information in the Application

In Sections 3.1.1.1.7 and 9.1.3, "National Weather Service," of the EGC ESP Emergency Plan, the applicant states that meteorological information can be acquired and used through the NWS. Available data will include existing and forecast wind directions, wind speed, and ambient air temperature. Appendix A to the EGC ESP Emergency Plan identifies an arrangement with Murray & Trettle, Inc., for meteorological support. In Section 5.3 of the EGC ESP Emergency Plan, the applicant established, in conjunction with State and county authorities, the contents of the initial notification message transmitted during a classified emergency. Meteorological information contained in this message will include wind direction and speed. Section 5.4 of the EGC ESP Emergency Plan states that followup messages will also contain the same information as that provided in the initial notification message.

Section 9.2.3, "State Monitoring Capabilities," of the EGC ESP Emergency Plan explains that the State of Illinois can currently dispatch its own field monitoring teams to track the airborne radioactive plume. The State also has the ability and resources to coordinate with Federal and utility monitoring teams to compare sample results. Appendix A to the EGC ESP Emergency Plan includes letters confirming the State of Illinois commitment to implement IPRA.

Sections 1E and 3A(8) of IPRA Volume I explain that the State of Illinois, in the form of IDNS, has the responsibility and resources to dispatch its own field monitoring teams to perform field monitoring within the plume exposure EPZ. The State also has the ability and resources to coordinate with Federal and utility monitoring teams. Section 3A(8) also details the IDNS response, which will deploy a radiological assessment field team (RAFT) to perform plume exposure rate verification, air sampling, and sampling of food, water, milk, and other media. If requested by IDNS, DOE and other Federal and State agencies may provide additional field teams. The RAFT conducts field monitoring using suitable radiation detection instruments in the downwind portion of the EPZ. The team analyzes samples in a mobile laboratory utilizing a gamma spectroscopy system. The team is also responsible for the assessment of radioactive plume pathways and they direct other field teams in determining the composition and location of the plume and in collecting of samples.

Sections 1D, 2F, and 2O, "DeWitt County, Radiological Considerations," of IPRA Volume VIII state that IEMA is responsible for performing confirmatory accident assessment. This includes, in part, deployment of field survey teams for radiation exposure monitoring and sample collection.

Section 3.1.1.1.4 of the EGC ESP Emergency Plan states that, if the applicant or the State of Illinois deemed assistance from DOE to be necessary or desirable, the State of Illinois would notify the appropriate DOE operations office.

Section 1E of IPRA Volume I explains that the State of Illinois has the responsibility and resources to dispatch its own field monitoring teams to track the radioactive airborne plume. The State also has the ability and resources to coordinate with Federal and utility monitoring teams.

13.3.3.10.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i) and 10 CFR 52.18. Under 10 CFR 52.17(b)(2)(i), an applicant for an ESP may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of

emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those that apply to major feature I, "Accident Assessment."

13.3.3.10.3 Technical Evaluation

In the EGC ESP Emergency Plan, the applicant provided a description of the contacts and arrangements made with offsite organizations for acquiring and evaluating meteorological information. The applicant also described how suitable meteorological data will be made available to the State.

The EGC ESP Emergency Plan and IPRA Volumes I and VIII describe the contacts and arrangements made for field monitoring within the plume exposure EPZ. The EGC ESP Emergency Plan and IPRA Volume I describe contacts and arrangements to locate and track the airborne radioactive plume, using either or both Federal and State resources.

13.3.3.10.4 Conclusions

As discussed in Section 13.3.3.10.1 of this SER, the applicant described methods, systems, and equipment for assessing and monitoring the actual or potential offsite radiological consequences of a radiological emergency condition at the ESP site. Based on its review, the staff concludes that the proposed major feature I is consistent with the guidelines in RS-002 and Supplement 2. Therefore, major feature I is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Section III and IV.B., insofar as it describes the essential elements of advanced planning that have been considered for accident assessment, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.11 Protective Response (Major Features J)

13.3.3.11.1 Technical Information in the Application

Figure 2.2-1 of the EGC ESP Emergency Plan identifies three relocation centers, including the Illinois State University field house, Monticello High School, and Richland Community College. These facilities provide multiple alternatives for relocating evacuated site personnel depending on wind direction and other factors that may impede relocation of evacuated site personnel. Figures 2.2-1 and 2.3-1, "Evacuation Routes to Relocation and Congregate Care Centers," of the EGC ESP Emergency Plan show evacuation routes. Section 10.1.1, "Evacuation Locations," of the EGC ESP Emergency Plan states that personal transportation, if available, will normally be used. The applicant will identify personnel without transportation and provide transportation, as necessary. In RAI 13.3-8, the staff requested that the applicant discuss the means it will use to transport visitors and nonessential personnel without transportation in the event of a site evacuation. In response to RAI 13.3-8, the applicant stated that Section 10.1.1 of the EGC ESP Emergency Plan discusses this. Section 10.1.1 explains that visitors onsite will assemble with and follow the instructions of their escorts. Both visitors and nonessential

personnel will be transported by the same conveyance in which they were brought to the site, typically by bus or personal vehicle. Determinations of personnel and visitors without vehicles can be made at the assembly area, and these individuals provided transportation, as necessary (e.g., they could be paired with other nonessential personnel for evacuation from the site by personal vehicle).

Section 10.1.3, "Evacuation," of the EGC ESP Emergency Plan states that evacuation will commence in accordance with future EGC ESP facility procedures as directed by the emergency director or his/her designee, unless one of the following conditions exists:

- Severe weather conditions threaten safe transport.
- A significant radiological hazard would be encountered.
- A security threat occurs that would have an adverse impact on the personnel while leaving the site.
- A condition similar to these in magnitude occurs that, in the opinion of the station emergency director, would adversely affect the site personnel.

Section 10.1.6, "Mechanism for Implementing Protective Action Recommendations," of the EGC ESP Emergency Plan discusses a mechanism for implementing protective action recommendations to the offsite agencies responsible for implementing protective actions for the general public within the 10-mile EPZ. Section 10.2, "Protective Actions Recommendations," of the EGC ESP Emergency Plan states that, for incidents involving actual, potential, or imminent releases of radioactive material to the atmosphere, the U.S. Environmental Protection Agency's (EPA) 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," dated May 1992, (hereafter referred to as EPA 400), Supplement 3 to NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants –Criteria for Protective Action Recommendations for Severe Accidents," dated July 1996, and Volume 4 of the NRC's "Response Technical Manual," Revision 4, dated March 1996 (hereafter referred to as RTM-96) will be used as the basis for the general public protective action recommendations.

Section 6.0, "Analysis of Evacuation Times," of the 1993 ETE provides the results of the analysis. The ETE analysis was conducted for peak populations under a variety of scenarios. The applicant calculated the ETEs for winter weekday, winter weeknight, summer weekday, and summer weekend. These scenarios were evaluated for normal and adverse weather conditions in accordance with NUREG-0654/FEMA-REP-1, Revision 1.

Section 1.2, "Site Location and Emergency Planning Zones (EPZ)," of the 1993 ETE provides a description of the nuclear power plant's general location, and Figure 1.2, "EPZ Evacuation Network," of the 1993 ETE is a map with the EPZ boundaries. Section 1.1, "General," of the ETE generally discusses how the analysis was conducted. The applicant developed the ETEs by using existing population data and the NETVAC computer simulation model.

Figures 2.1-1 and 2.2-1 of the EGC ESP Emergency Plan show the plume exposure pathway planning zone, EPZ subareas, evacuation routes, and relocation centers. In RAI 13.3-20(k), the

staff requested the applicant to clarify the location of the Registration and Congregate Care Centers. The applicant has yet to respond to RAI 13.3-20(k).

Sections 2.1 and 2.2 of the 1993 ETE describe the general assumptions, which include automobile occupancy factors, method of determining roadway capacities, and method of estimating populations.

The applicant used the computer model NETVAC to develop the ETEs. Sections 2.2 and 2.3 of the 1993 ETE describe the methodology. Section 5.5 of the 1993 ETE also describes the evacuation simulation and the structure and major features associated with NETVAC.

The 1993 ETE estimates permanent residents using 1990 census tract and block data. Section 3.1, "Permanent Residents," and Tables 1.1, "Townships/Incorporated Areas Partially or Entirely within the Clinton EPZ," and 1.2, "Subareas within the Clinton EPZ," of the 1993 ETE present the data. Census block maps of the EPZ were used to update and distribute the total 1990 population within each township or incorporated area and sector. The distribution of the total permanent resident population was based on land allocation using the detailed census block maps. The 1993 ETE estimates 12,404 permanent residents in the CPS EPZ. Section 2.3.2.1, "Permanent Population," of the 1993 ETE states that the resident population within the plume exposure pathway EPZ is 12,358. Sections 3.1.1, "Auto-owning Permanent Population," and 3.1.2, "Transport-dependent Permanent Population," of the 1993 ETE describe the assumptions regarding the auto-owning and transport-dependent populations. The auto occupancy assumption for auto-owning and transport-dependent populations is one vehicle per household. In RAI 13.3-20(d), the staff requested that the applicant provide an estimate of the number of nonauto-owning residents versus the transport-dependent residents. The applicant has yet to respond to RAI 13.3-20(d).

Section 3.2, "Seasonal Residents," of the 1993 ETE also includes information on seasonal residents, who are residents that reside in the area on a temporary basis. The applicant obtained the seasonal residence (assuming three people per housing unit) from the 1990 census. The population was determined to be 54 people within the EPZ.

The Phase One Report conducted an assessment of changes in population in 2003 using the 2000 census data. In RAI 13.3-15, the staff asked the applicant whether the information contained in the Phase One Report that documents the assessment of population changes in the plume exposure pathway EPZ should be considered as an update to the 1993 ETE. In response to RAI 13.3-15, the applicant stated that the Phase One Report was not used in the preparation of the EGC ESP Emergency Plan and need not be referenced or considered because the conclusions identified in the Phase One Report were independently developed and reported in Section 2.3.3 of the EGC ESP Emergency Plan.

Section 3.3, "Transient Population," of the 1993 ETE describes the transient population, which includes people in the workforce, hotels/motels, and recreational areas. Tables 3.3, "Transient Population Distribution within the Clinton EPZ: Winter Weekday"; 3.4, "Transient Population Distribution within the Clinton EPZ: Winter Weeknight"; 3.5, "Transient Population Distribution within the Clinton EPZ: Summer Weekday"; and 3.6, "Transient Population Distribution within the Clinton EPZ: Summer Weekend"; present the total transient population. Appendix 1, "Transient and Special Facility Population Data," to the 1993 ETE lists the transient population and the corresponding facilities. The applicant estimated the transient population for each of

the scenarios evaluated (winter weekday, winter weeknight, summer weekday, summer weekend). For purposes of estimating the total number of vehicles associated with the transient population segment, an auto occupancy factor of one employee per vehicle was used for all work places, except at CPS where an average occupancy factor of 1.5 persons per vehicle was used. For the hotel/motel population, it was assumed that there would be one vehicle per hotel/motel unit. Three persons per vehicle was assumed at all recreational facilities except at Little Galilee Christian Assembly Church Camp and the Calvary United Pentecostal Christian Camp where buses are provided. In RAI 13.3-20(s), the staff asked the applicant to explain why it assumed the automobile occupancy rate to be different for CPS workers than that for other factories. The applicant has not yet responded to RAI 13.3-20(s).

Section 2.3.2.3 of the EGC ESP Emergency Plan states that hotels and motels add 39 more people to the transient population. In RAI 13.3-20(p), the staff asked the applicant to provide its assumptions regarding hotel/motel population estimate of 39 people per day. The applicant has yet to respond to RAI 13.3-20(p). In addition, Section 2.3.2.3 of the EGC ESP Emergency Plan discusses changes to the transient population since the 1993 ETE. The applicant developed the estimates used in the ESP application from 2002 survey data. Table 2.3-2 of the EGC ESP Emergency Plan provides a summary of the transient population included in the counts.

Section 2.3.2.3 of the EGC ESP Emergency Plan also states that migrant farm workers are included in the transient population statistics because of the nature of the farming in the region. In RAI 13.3-20(r), the staff asked the applicant to provide trip generation times for the migrant worker population and information on the automobile occupancy rate for migrant workers. The applicant has not yet responded to RAI 13.3-20(r).

Section 13.3.1.1 of this SER discusses the applicant's analysis of the transient population associated with the Apple and Pork Festival.

The 1993 ETE describes the special facility population in Section 3.4, "Special Facilities Population," and Appendix 1. Tables 3.7, "Special Facilities Population Distribution within the Clinton EPZ: Winter Weekday"; 3.8, "Special Facilities Population Distribution within the Clinton EPZ: Winter Weeknight"; 3.9, "Special Facilities Population Distribution within the Clinton EPZ: Summer Weekday"; and 3.10, "Special Facilities Population Distribution within the Clinton EPZ: Summer Weekend"; of the 1993 ETE also present the special facility population totals by sector for all scenarios analyzed. The 1993 ETE assumes a vehicle occupancy factor for students of 60 persons per bus. The analysis also assumes the vehicle occupancy factor for hospitals, nursing homes, and correctional facilities to be 40 people per bus. In RAI 13.3-20(l), the staff asked the applicant to explain its assumptions of an automobile occupancy factor of 60 students per bus and 40 residents per bus for special facility populations. The staff asked the applicant to provide specific information regarding whether vans or ambulances will be needed in addition to the buses. If vans and ambulances are needed, the applicant should provide information on whether they are included in the vehicle estimate. The applicant has yet to respond to RAI 13.3-20(l). In RAI 13.3-20(t), the staff asked the applicant to provide trip generation times for special facility population. In addition, the staff asked the applicant to discuss the availability of buses and drivers and the process for mobilizing these populations during an evacuation, as well as whether evacuations can occur in a single trip or if return trips are necessary. The staff also asked the applicant to provide additional information to support its assumptions for the time distributions. The applicant has not yet responded to RAI 13.3-20(t).

Section 2.3.2.3.1 of the EGC ESP Emergency Plan discusses changes to the special facility population since the 1993 ETE. The applicant developed the estimates used in the ESP application from 2002 survey data. In RAI 13.3-20(q), the staff asked the applicant to provide a reference for community college enrollment. The applicant has yet to respond to RAI 13.3-20(q).

Section 5.1, "Evacuation Analysis Cases," and Table 5.1, "Clinton EPZ Analysis Areas," of the 1993 ETE describe the analysis areas for the time estimates. The applicant prepared time estimates for the areas within 2 miles of the CPS, for 67.5-degree sectors from 0–5 miles, and 0–10 miles from the plant, and for the entire Clinton plume exposure EPZ. Tables 6.1, 6.2, 6.3, and 6.4 provide ETE data following a keyhole approach with a simultaneous evacuation of the 2-mile radius and combinations of three sectors for each condition. This approach is adequate for determining the ETE.

Section 4.0 and Appendix 3 to the 1993 ETE provide a description of the road network and the roadway network listing and capacities. The table in Appendix 3 indicates the evacuation route segments and their characteristics, including capacity.

Section 6.1 of the 1993 ETE describes the locations where queuing is likely to occur under the various scenarios.

Section 7.2, "Evacuation Traffic and Access Control Locations," of the 1993 ETE describes the locations identified in the NETVAC simulation where traffic management personnel may be necessary during the evacuation. In RAI 13.3-20(m), the staff requested the applicant to provide information on whether pass-through traffic affects the roadway capacity and the ETE within the plume exposure pathway EPZ evacuation routes. The applicant has yet to respond to RAI 13.3-20(m).

In RAI 13.3-20(o), the staff asked the applicant to discuss the roadway characteristics, traffic control measures, and area types (AT) that support the NETVAC model runs. The applicant has yet to respond to RAI 13.3-20(o).

Section 2.3.3 of the EGC ESP Emergency Plan describes the analysis conducted to test the validity of the 1993 road network capacities and the current state of the road network. The applicant evaluated the EPZ zones for changes in the infrastructure, drove the principal roadways, and conducted a direct comparison of some of the link evaluation routes and nodes. No major differences were noted.

Figure 1.2 in the 1993 ETE shows the EPZ evacuation network and codes. The sector and quadrant boundaries are numbered and are indicated on the map.

Section 4.0 and Appendix 3 to the 1993 ETE provide a description of the road network and the roadway network listing and capacities. The table in Appendix 3 indicates the evacuation route segments and their characteristics, including capacity. In RAI 13.3-20(e), the staff requested the applicant to clarify whether the characteristics for each segment analyzed in the 1993 ETE are for the narrowest section or bottleneck if the roadway is not uniform. The applicant has yet to respond to RAI 13.3-20(e).

The NETVAC model input files in Appendix 3 assign the AT identified as '4,' or Residential, for 100 percent of the EPZ. In RAI 13.3-20(n), the staff asked the applicant to explain why the NETVAC model input files in Appendix 3 assign the AT identified as '4,' or Residential, for the entire plume exposure pathway EPZ. The applicant has yet to respond to RAI 13.3-20(n).

Section 6.0 of the 1993 ETE provides the results of the analysis. The analysis for the 1993 ETE was conducted for peak populations under a variety of scenarios. The applicant calculated ETEs for winter weekday, winter weeknight, summer weekday, and summer weekend. These scenarios were all evaluated for normal and adverse weather conditions in accordance with NUREG-0654/FEMA-REP-1, Revision 1.

Sections 2.2 and 2.3 of the 1993 ETE describe the method for computing the total evacuation time. The time estimates are based on a time distribution of evacuation events. Section 5.4 and Figure 5.1 of the 1993 ETE describe the assumptions used for the evacuation preparation times and departure distributions. Section 5.5 provides a description of general structure and major features associated with NETVAC.

However, to better understand the assumptions used in the methodology for developing the distributions in Section 5.4, RAI 13.3-20(d) was asked. RAI 13.3-20(d) asked the applicant to discuss the basis for neighbors and State/local authorities contributing one vehicle per household for the transport dependent (non-auto-owning) population as described in the 1993 ETE. The applicant needs to provide site specific data regarding how many nonauto-owning households are in the plume exposure pathway EPZ and also provide the methodology for determining the transport-dependent population. The NRC asked the applicant to provide an estimate of the number of auto-owning residents versus transport-dependent residents, as well as information on the initiation/mobilization time distribution for transport-dependent population. The applicant has yet to respond to RAI 13.3-20(d).

Section 5.4 and Figure 5.1 of the 1993 ETE describe the assumptions used for the evacuation preparation times and departure distributions. The applicant does not provide or discuss distribution for the transport-dependent population. The mobilization distribution for hospitals and nursing homes is considered to be the same as the distribution for the correctional facility. In RAI 13.3-20(d), the staff asked the applicant to provide a separate estimate of the time required to evacuate the transport-dependent population and information on the initiation/mobilization time distribution for transport-dependent population. The applicant has yet to respond to RAI 13.3-20(d).

The NETVAC model is acceptable for analysis of traffic queue and identification of traffic delays. Figure 1.2 of the ETE indicates the traffic queue locations. In RAI 13.3-20(u), the staff asked the applicant to provide on-road travel and delay times, as well as the estimated number of cars evacuating, for each segment. The applicant has not yet responded to RAI 13.3-20(u).

Figure 5.1 of the 1993 ETE presents the notification and mobilization time distributions. In RAI 13.3-20(v), the staff asked the applicant to provide the percentage of the population as a function of time, since the 1993 ETE does not include the additive reporting format for time estimates when probability distributions are used. The applicant has not yet responded to RAI 13.3-20(v).

In RAI 13.3-16, the staff asked the applicant to provide a description of the method(s) used to confirm evacuation and the estimated time required for confirmation of evacuation. In response to RAI 13.3-16, the applicant stated that several methods are available for confirmation of evacuation. One method is random sample telephone surveys with success based on the number of positive responses (i.e., someone still at home) being within the expected range. The time required for such confirmation is dependent on the number of persons available to attempt telephone contact and the number of homes to be sampled. These can be varied as desired, and, therefore, specific time estimates are not meaningful and have not been performed.

In RAI 13.3-14, the staff asked the applicant to provide the results of the review of the draft ETE study by State and local organizations. In response to RAI 13.3-14, the applicant stated that it conducted the 1993 ETE for the exclusive use of the State and local organizations in developing their respective emergency plans. The results of the review state that the draft ETE represents a reasonable and reliable approach to the requirements under NUREG-0654/FEMA-REP-1. The results also state that, given the small population base within the EPZ (i.e., a 10-mile radius of CPS), the projected evacuation time frames are appropriate in most instances and acceptable from an emergency preparedness and planning standpoint. The applicant included each comment resulting in an adaptation of the ETE in the final version of the ETE.

Figures 2.2-1 and 2.3-1 of the EGC ESP Emergency Plan show evacuation routes.

Figure 2.2-1 of the EGC ESP Emergency Plan identifies three relocation centers, including the Illinois State University field house, Monticello High School, and Richland Community College.

Maps A, "Clinton Traffic and Access Control Map," and C, "Clinton Sheltering and Evacuation Map," in IPRA Volume I show evacuation routes, sheltering and evacuation areas, and relocation centers. The local plan described in IPRA Volume VIII contains maps indicating the evacuation/sheltering areas and relocation centers. In RAI 13.3-13(e), the staff asked the applicant to provide references to maps in the local emergency plans that show evacuation routes. In response to RAI 13.3-13(e), the applicant stated that evacuation routes are referenced in Annex 2A of IPRA Volume VIII. Maps A through E in Section 1E of IPRA Volume VIII show the identified routes. In addition, Section 2J of IPRA Volume VIII generally discusses evacuation.

Figure 2.3-2 of the EGC ESP Emergency Plan is a map showing population distribution around the site with the information presented in sector format.

Section 1A, "General Information, Site Information," of IPRA Volume VIII states, "the 2000 permanent population within five miles of the CPS is 1,480...a projected total of 11,300 persons living between five and ten miles..." resulting in a total of 12,780 for the entire EPZ. Figure 1, "Clinton Station EPZ 2000 Permanent Residential Population Figures," in Section 1A of IPRA Volume VIII lists the total population as 13,268. In addition, Section 3C, "Shelter Guide, EPZ Population," of IPRA Volume VIII lists the EPZ population by township, which also has a total of 13,268.

Section 5.2.1, "Onsite," of the EGC ESP Emergency Plan states that, when an emergency is declared, reclassified, or terminated, an announcement will be made over the plant PA system

or by other means. If the EGC ESP facility is a dual unit, the unaffected unit control room will be notified of the emergency declaration or change. The CPS control room will be notified of the emergency declaration or change. These notifications will include the declaration of the emergency classification and response actions that site personnel are to take. In RAI 13.3-6, the staff asked the applicant to discuss the means that will be used for notifying transient and resident population in the owner-controlled area. In response to RAI 13.3-6, the applicant stated that Section 5.2, "Notification and Mobilization of Emergency Response Personnel," of the EGC ESP Emergency Plan does not address the means that will be used to notify transient and resident population in the owner-controlled area because this section is intended to address notification of the ERO personnel. However, the plant PA system and the siren systems would also notify the non-ERO personnel in the owner-controlled area, including transient and resident populations. Sections 5.5.1 and 10.1 of the EGC ESP Emergency Plan also discuss the means that will be used to notify transient and resident population, including sirens (both station alarms/siren system and the ANS and the EAS (i.e., local radio stations).

Section 1G, "Overview, Notification of the Public," of IPRA Volume I outlines the system for notification of the public. The primary system is an outdoor warning system (sirens), which county officials activate. Public announcements made over mobile PA systems can supplement the sirens.

Section 2G(1)(b), "Clinton Power Station EPZ Siren Warning System," of IPRA Volume VIII states, "When appropriate, the DeWitt County/Clinton ESDA Coordinator will initiate the activation of the Clinton Power Station EPZ Siren Warning System." Section 2.1 references Annexes 2A through 2E and Chapter 3, "Sheltering Guide," for the notification of special facilities. Section 2P is the prescribed messages for mobile PA systems and local emergency information radio stations. Annexes 2A through 2F in IPRA Volume VIII are the checklist procedures for DeWitt County, the towns of Clinton, Weldon, and Wapella, DeWitt Village, and the support counties, respectively. The support counties do not have responsibility for notifying the EPZ population. The risk jurisdiction procedures specify the methods necessary for notifying special facilities. The DeWitt County sheriff's procedures call for mobile PA systems to be used if sirens were to fail. The Clinton police department chief has a "mobile public address warning scripts" attachment to the procedures.

Section 2A of IPRA Volume VIII states that the notification of the public will be through the CPS EPZ prompt notification system and commercial radio. This prompt notification system consists of a siren warning system throughout the CPS EPZ.

Section 5C of IPRA Volume I describes the public education material distributed annually. The public information booklets are also used to identify persons who have special concerns (e.g., the mobility impaired) related to their ability to follow protective actions that may be recommended.

Attachment 1, "Department Assignments and Responsibilities," of Annex 2A in IPRA Volume VIII identifies the Health Department administrator as being responsible for notifying mobility-impaired individuals, assisting in the identification of nonambulatory patients, and determining the total number of patients that would require transportation. Attachment 5, "Clinton Power Station Special Facilities," in IPRA Volume VIII is a list of the agencies that are responsible for contacting the facilities. The list includes recreational areas, schools, industries,

group homes for the developmentally disabled, medical facilities, day care centers, preschools, and motels.

Attachment 4, "Mobility Impaired Individuals Shelter-in-place, Evacuation and Return Instructions," of Annex 2B of IPRA Volume VIII is a town of Clinton checklist procedure for notifying mobility-impaired individuals if shelter-in-place has been recommended. The checklist also includes instructions for the evacuation and return of mobility impaired individuals. The same attachment is included in Annex 2C, "Weldon Checklist Procedures," for the town of Weldon; Annex 2D, "Wapella Checklist Procedures," for the town of Wapella; and Annex 2E, "DeWitt Village Checklist Procedures," for DeWitt Village.

Section 3B, "Sheltering Guide, Protective Action Instructions," of IPRA Volume VIII is a set of instructions for the county jail, mobility-impaired population, population with special transportation requirements (both medical needs and transients), and school students.

Section 1E(4), "Overview, Basic Functions, Protective Actions," of IPRA Volume VIII states the following:

When conditions warrant, IDNS will recommend that all facilities within the 10-mile EPZ that are incapable of timely evacuation (e.g., hospitals and nursing homes) administer potassium iodide (KI) to all individuals in the facility. IDNS will also recommend at that time that emergency workers in the EPZ take KI.... Details of these steps are described in IDNS SOPs.

Section 2O(3), "DeWitt County, Radiological Considerations, Potassium Iodide," of IPRA Volume VIII states, "The recommendation to administer KI to emergency personnel and immobile populations, if warranted, will normally be furnished to the DeWitt County DCO [dosimetry control officer] by the IEMA Liaison for dissemination to affected departments and municipalities." Section 1D in IPRA Volume VIII discusses the response for State agencies that have district or regional offices in the Clinton area. Annexes 2A through 2F in IPRA Volume VIII detail the procedures for implementing the recommendation to administer KI.

Section 1E(4) of IPRA Volume I states, "If evacuation is recommended, the public will be advised to leave their homes and go to congregate care shelters located in host communities where they may remain until it is safe to return to their homes." Section 1E(4) also discusses the proposed means of relocating the public.

Sections 2J and 3B, Annexes 2A through 2F, Appendix C, "Clinton Power Station EPZ Evacuation Guide," and Maps A, "Clinton Traffic and Access Control Map," and C, "Clinton Sheltering and Evacuation Map," of IPRA Volume VIII address the proposed means of relocation. Buses, ambulances, and sheriff's department vehicles will be used for the mobility-impaired population.

Appendix D, "Registration Centers and Congregate Care Shelters," to IPRA Volume VIII lists the registration centers and congregate care shelters. Map C indicates the location of the centers, all of which are more than 20 miles from the site. Section 1C of IPRA Volume VIII gives general information about the congregate care shelters, while Section 1E, "General Information, Maps," lists the maps. Appendix C to IPRA Volume VIII is a list of the host communities for each subarea and the primary evacuation routes.

In RAI 13.3-13(f), the staff requested that the applicant describe the State and local governments' concepts for using the traffic capacities of evacuation routes for implementing protective measures. In response to RAI 13.3-13(f), the applicant stated that IPRA does not describe the State and local governments' concepts for using the traffic capacities of evacuation routes for implementing protective measures. However, the 1993 ETE (which does consider the traffic capacities of the evacuation routes) is considered in the planning process when establishing the boundaries of the subareas. For instance, during an actual emergency, Illinois Department of Transportation (IDOT) representatives are available in the SEOC and forward command post to provide up to the minute information on road repairs and traffic congestion. In addition, Section 3A(11), "Agency Responsibilities, State Agencies, Transportation," of IPRA Volume I discusses IDOT's responsibilities. The County Highway Department performs a similar function.

Section 1E(4) of IPRA Volume I states, "traffic and access control procedures are utilized to control traffic for all shelter-in-place and evacuation situations and to control access into sheltered and evacuated areas." Section 3A(2), "Agency Responsibilities, State Agencies, Illinois Commerce Commission," of IPRA Volume I details the Illinois Commerce Commission's responsibilities. Section 3A(6), "Agency Responsibilities, State Agencies, Illinois Department of Military Affairs," of IPRA Volume I details the Illinois Department of Military Affairs' responsibilities. Section 3A(7), "Agency Responsibilities, State Agencies, Illinois Department of Natural Resources," of IPRA Volume I details the Illinois Department of Natural Resources' (IDNR) responsibilities.

Section 1D of IPRA Volume VIII details the regional response of the State agencies primarily in the assistance of access control. Annexes 2A through 2F in IPRA Volume VIII provide details of the assignment of traffic/access control to the sheriff's department and the checklists associated with their activities. Appendix B, "Traffic and Access Control Guide," to IPRA Volume VIII lists the control posts and guidelines (i.e., which direction to direct the traffic or prevent the traffic from flowing). Map A shows all of the points in the EPZ.

Section 3A(6) of IPRA Volume I includes information for the Illinois Department of Military Affairs and information concerning the use of wreckers and crews that can clear highways of debris and vehicles. Section 3A(7) of IPRA Volume I includes information for the IDNR, as well as information on assisting the evacuation by accommodating evacuees who intend to camp out or live in recreation vehicles on IDNR lands. Section 3A(11) of IPRA Volume I includes information for the IDOT and information concerning the use of department resources to control access to Federal and State highways.

Section 1D of IPRA Volume VIII details the regional response of the State agencies, primarily in the assistance of traffic and access control. Attachment 1 to Annex 2A in IPRA Volume I assigns the highway engineer the responsibility to ensure evacuation routes are clear of snow, obstacles, and debris. Annexes 2B through 2F to IPRA Volume I contain similar assignments in each of the towns, which should be included in the ESP application references.

In RAI 13.3-13(g), the staff asked the applicant to describe the State and local organizations' concepts for using ETEs when considering the evacuation of various sectors and distances. In response to RAI 13.3-13(g), the applicant stated that IPRA does not directly address such concepts. However, Section 3A(11) of IPRA Volume I discusses IDOT's responsibilities, which include ensuring the expeditious and safe movement of traffic. The County Highway

Department performs a similar function. In addition, the planning process considers the 1993 ETE when establishing the boundaries of the subareas. For instance, during an actual emergency, IDOT representatives are available in the SEOC and forward command post to provide up to the minute information on road repairs and traffic congestion.

Section 1E(4) of IPRA Volume I states the following:

Protective actions include shelter-in-place, evacuation, traffic and access control, and food, water, and milk control. Protective Action Guides (PAGs) are projected personnel radiation dose values at which certain protective actions should be implemented.... Plume exposure pathway PAGs are taken from the "EPA Manual of Protective Action Guides and Protective Actions for Nuclear Incidents."

In RAI 13.3-13(h), the staff asked the applicant to describe the IDNS standard operating procedures (SOPs) relating to the basis for choosing a recommended protective action for the plume. In response to RAI 13.3-13(h), the applicant stated that Section 2J i of IPRA Volume VIII provides this information. In addition, Section 1E(4) of IPRA Volume I discusses the basis for protective action recommendations.

Section 1E(5)(b), "Overview, Basic Functions, Parallel Actions, Radiation Exposure Control," of IPRA Volume I states the following:

Evacuees arriving at designated monitoring and decontamination centers (generally co-located with primary congregate care facilities) will be monitored for radioactive contamination and decontaminated, as necessary. The monitoring and decontamination of evacuees, emergency workers and their vehicles will be conducted by personnel under IDNS supervision, utilizing portal and hand-held monitoring instruments and decontamination equipment provided by IDNS for that purpose. Medical treatment, if required for a contaminated individual, will be provided under the State's emergency medical services delivery system with monitoring and decontamination support provided by IDNS staff.

Section 3C(1), "Agency Responsibilities, Private Organizations, American Red Cross," of IPRA Volume I details the American Red Cross's responsibility to provide mass care services for the evacuees and emergency workers. Its services will be provided in accordance with its current policies and procedures (i.e., those include a registration component).

Section 3A(8) of IPRA Volume I details the IDNS responsibilities, including the monitoring and decontamination of evacuees.

Section 2J, paragraph 3.f., of IPRA Volume VIII states, "the local chapter of the American Red Cross has the responsibility of registering all evacuees in congregate care shelters in the host areas. Standard record keeping methodology will be used in registering evacuees." Section 2J(4), "DeWitt County, Evacuation," paragraph 4, of IPRA Volume VIII states, "provisions will be made for monitoring and decontamination of evacuees at host area congregate care shelters."

13.3.3.11.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E of 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.B., and IV.D. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose the major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of the emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to major feature J, "Protective Response."

13.3.3.11.3 Technical Evaluation

The staff reviewed the applicant's response to RAIs 13.3-8, 13.3-14, 13.3-15, 13.3-16, and 13.3-20(d) and found them to be acceptable based on the evaluation below.

The application adequately describes the evacuation routes and transportation for onsite individuals to suitable offsite locations, including alternatives for inclement weather, high traffic density, and specific radiological conditions.

The application describes a mechanism for recommending protective actions to the appropriate State and local authorities, in accordance with EPA 400. The applicant references RTM-96. The NRC developed this manual to use in providing licensee oversight in the event of an emergency. Therefore, the staff did not consider the applicant's reference to RTM-96 in its review.

The application contains a vicinity map showing the plant location, along with a detailed map of the plume exposure pathway EPZ. The map is legible and identifies transportation networks, topographical features, and political boundaries.

The application should include all assumptions used in the analysis, which are automobile occupancy factors, the method of determining roadway capacities, and the method of estimating populations.

A description of the method of analyzing the evacuation times and a general description of the algorithm are provided in the application, along with a source for obtaining further information or documentation. NETVAC is an adequate model for use in ETE development. The applicant

provides input files that are consistent with the ETE statements on evacuation routing and traffic loading.

Although the application does not provide all combinations of radial sectors and ring distances as specified in Appendix 4, "Evacuation Time Estimates within the Plume Exposure Pathway Emergency Planning Zone," to NUREG-0654/FEMA-REP-1, Revision 1, there are sufficient data to be representative of the guidance. Also, operationally, the subareas, not radial sectors and rings, are used for protective action decisionmaking.

The application adequately describes the different combinations of areas (and zones) used in the ETEs including the inner area (and inner zone). Hence, the ETE for the outer areas (zones) will include the simultaneous evacuation of the adjacent inner areas (zones).

The subareas described in the application, for which ETEs are required, encompass the entire area within the plume exposure EPZ. The boundaries of the subareas are based upon the same factors as the EPZ (i.e., demography, topography, land characteristics, access routes, and local jurisdictions). To the extent practical, the sector boundaries do not divide densely populated areas. Special facilities are also noted on these maps, to the extent that their locations can be geographically specified. Populations are provided by evacuation areas. Separate totals are provided for permanent residents, transient populations, and special facility population.

Tables 6.1, 6.2, 6.3, and 6.4 in the application provide ETE data following a keyhole approach with a simultaneous evacuation of the 2-mile radius and combinations of three sectors for each condition. This approach is adequate for determining ETEs.

The application provides a map showing only those roads used as primary evacuation routes. Each segment of the network is numbered for reference. The sector and quadrant boundaries are also indicated.

Each of the evacuation time components is presented in the application along with the total evacuation time. The analysis considered both normal and adverse conditions. The applicant identified the adverse frequency used in the 1993 ETE, and this condition is severe enough to define the sensitivity of the analysis to the selected events. Such conditions affect travel times and capacity.

The application describes critical assumptions that underlie the time estimates (e.g., day versus night, workday versus weekend, peak transient versus off-peak transient, and evacuation on adjacent sectors versus nonevacuation). The relative significance of alternative assumptions is addressed, especially with regard to time-dependent traffic loading of the evacuation roadway network segments.

The method of computing total evacuation time is specified in the application. Distribution functions are used, and estimates are made of the likelihood that each stage in the evacuation sequence will be accomplished in a given period of time. The applicant developed distribution functions for notification of the various categories of the evacuee population. There are separate distributions for auto-owning households, school populations, and transit-dependent populations.

The application includes maps showing that population distribution around the site by evacuation subareas has been identified, and the means for notifying all segments of the transient and resident population are described.

State and local plans contain the following:

- a proposed means for protecting those persons whose mobility may be impaired
- a proposed means for the use of radioprotective drugs for emergency workers and institutionalized persons within the plume exposure EPZ whose immediate evacuation may be infeasible or very difficult
- a proposed means of relocation
- a potential relocation center in host areas which are at least 5 miles, and preferably 10 miles, beyond the boundaries of the plume exposure EPZ
- a control and access to evacuated areas and organization responsibilities for such control
- an identification of, and means for, dealing with potential impediments to use of evacuation routes and contingency measures

Volumes I and VIII of the IPRA describe the means for registering and monitoring evacuees at reception centers in host areas.

However, the staff needs additional information related to the 1993 ETE as requested in RAIs 13.3-20(k-v). Also, the applicant has not adequately addressed the estimated time required for confirmation of evacuation (RAI 13.3-16). These items related to ETEs comprise **Open Item 13.3-4**.

In response to RAIs 13.3-13(e-h), the staff needs the following information related to protective measures in State and local emergency plans, including a description of the State and local governments' concepts for using the traffic capacities of evacuation routes for implementing protective measures, a description of the State and local organizations' concepts for using ETEs when considering the evacuation of various sectors and distances, and a description of the IDNS SOPs that relate to the basis for choosing a recommended protective action for the plume exposure pathway. The applicant has also not adequately addressed the review of the draft ETE submitted by State and local organizations involved in emergency response for the site in its response to RAI 13.3-6. These items comprise **Open Item 13.3-5**.

13.3.3.11.4 Conclusions

Based upon the information contained in Section 13.3.3.11.1 of this SER, to obtain acceptance of major feature J the applicant should provide additional information related to ETEs in RAIs 13.3-20(k-v), information related to protective measures in State and local emergency plans in RAIs 13.3-13(e-h), and information related to the notification of people in the owner-controlled area in RAI 13.3-6. Therefore, the staff concludes that the applicant needs to

provide additional information related to ETEs associated with State and local emergency plans and recommended protective actions associated with the State emergency plan to support acceptance of proposed major feature J. The staff will determine acceptability of this major feature and document its determination in the FSER, based on information the applicant has provided to date and its response to Open Items 13.3-4 and 13.3-5. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.12 Radiological Exposure Control (Major Feature K)

13.3.3.12.1 Technical Information in the Application

Section 11.1, "Emergency Exposure Guidelines," of the EGC ESP Emergency Plan states that, in emergency situations, workers may receive exposure under a variety of circumstances to assure safety and protection of others and of valuable property. These exposures will be justified if the maximum risks or costs to others that are avoided by their actions outweigh the risks to which the workers are subjected. Table 11.1-1, "Emergency Exposure Guidelines," of the EGC ESP Emergency Plan provides the emergency worker dose limits. Dose extensions beyond the 10 CFR Part 20 limits must be authorized by the emergency director. Section 11.2, "Emergency Radiation Protection Program," of the EGC ESP Emergency Plan describes guidelines on dose limits during an emergency.

Section 11.1 of the EGC ESP Emergency Plan states that the station emergency director shall have the nondelegable responsibility for authorizing personnel exposure levels under emergency conditions in accordance with the EPA emergency worker and lifesaving PAGs. Whenever possible, the concurrence of the radiation protection manager (RPM) should be secured before individuals are exposed to dose equivalents beyond the EPA 400 lower limit. Section 11.2 of the EGC ESP Emergency Plan describes an onsite radiation protection program to be implemented during an emergency.

Section 11.2.1, "Personnel Monitoring," of the EGC ESP Emergency Plan describes the use of thermoluminescent dosimetry (TLD) and personnel self-reading dosimeters capable of measuring expected exposures to monitor emergency workers. The capability exists to process TLDs 24 hours per day in emergencies, if necessary.

Section 1E(5)(b) of IPRA Volume I states that IDNS is responsible for all aspects of radiation exposure control. The RAFT exposure control officer (ECO) is responsible for protecting emergency workers from excessive exposure to ionizing radiation. The ECO is also responsible for maintaining a full legal record of exposure. Detailed monitoring of emergency workers is accomplished through the use of dosimetry, bioassay, and whole body counting, as warranted. The ECO will issue dosimetry and instructions for use to emergency workers. At the end of each day's assignment, State emergency workers turn in their dosimetry to their ECO for processing.

Sections 2O(1), "DeWitt County, Radiological Considerations, Dosimetry Control," and 1D and Annexes 2A through 2F of IPRA Volume VIII state that the local DCO issues a direct-read dosimeter, a TLD, a bottle of KI, and instructions for use of dosimetry and KI to all emergency workers. Workers are instructed to read their dosimeters every 30 minutes, unless otherwise

directed. Emergency workers record their exposure on a radiation exposure record. Emergency workers are instructed to report (to their responsible DCO) an exposure of 3 roentgen (R). The DCO will contact the IEMA liaison at the DeWitt County EOC for exposure control guidance. Section 1E(4) of IPRA Volume I states that the 3 R reporting limit may be adjusted downward if conditions warrant, based on actual or projected doses under emergency conditions.

Annexes 2A through 2F in IPRA Volume VIII require that, as instructed or at the end of their assigned mission, emergency workers turn in their dosimetry and exposure control logs to the DCO. Section 2O(1) of IPRA Volume VIII states that TLDs and radiation exposure records should be returned to IEMA for processing.

In addition, the RPMs (as appropriate) will maintain emergency worker dose records in accordance with future emergency and radiological protection procedures. Emergency workers will be instructed to read their dosimeters frequently, and TLDs may be processed with increased periodicity.

Section 1E(5)(b) of IPRA Volume I states that the monitoring of the State of Illinois emergency workers is accomplished through the use of dosimetry, bioassay, and whole body counting, as warranted. Section 3A(8) of IPRA Volume I states that, to perform tasks associated with the radiological response to a nuclear accident, IDNS maintains a comprehensive inventory of appropriate equipment, and that all emergency response equipment and instruments are inspected, inventoried, and operationally checked once each quarter. In RAI 13.3-13(i), the staff asked the applicant to describe how the State will acquire and distribute dosimeters, both direct-reading and permanent record devices. In response to RAI 13.3-13(i), the applicant stated that Sections 2H and 2O(1) in IPRA Volume VIII provide a description of how the State will acquire and distribute dosimeters. In addition, Section 3A of IPRA Volume I provides information regarding dosimetry for State agency personnel who have field assignments, such as Illinois State police (ISP), IDNR, and IDOT. Also, Section 1D of IPRA Volume VIII discusses dosimetry for the ISP, IDNR, and IDOT districts and regions specific to the CPS.

Section 2O(1) of IPRA Volume VIII states that IEMA distributes dosimetry equipment and forms to DCOs, and then receives the TLDs and radiation exposure records after use.

Sections 1E(4) and 3A(8) of IPRA Volume I state that IDNS is responsible for all aspects of radiation exposure control. The RAFT ECO is responsible for protecting emergency workers from excessive exposure to ionizing radiation. The applicant took exposure limits for emergency workers from EPA 400. Section 2O(2), "DeWitt County, Radiation Exposure Control," of IPRA Volume VIII states that the following exposure limits are observed for all emergency workers within the State of Illinois:

| Dose Limit (Rem) | Dose Limit Approved for: |
|------------------|---|
| 5 | All activities |
| 10 | Protection of valuable property |
| 25 | Lifesaving or protection of large populations |
| >25 | Lifesaving or protection of large populations, only as a voluntary basis to persons fully aware of the risks involved |

Table 13.3-1 State of Illinois Dose Limits for Emergency Workers

Additionally, for emergency worker exposure control purposes, IEMA has established a 3 R notification limit. If an emergency worker's exposure approaches 3 R, he or she must report to his or her DCO or ECO. The DCO/ECO will expeditiously notify IEMA, which will provide further instructions in accordance with SOPs.

Section 11.2.3, "Contamination and Decontamination," of the EGC ESP Emergency Plan states that, during emergency conditions, normal plant contamination control criteria will be adhered to as much as possible. However, these limits may be modified by the applicable RPM in accordance with existing radiological protection procedures should conditions warrant.

Section 1E(5)(b) and Section 2O(4), "DeWitt County, Decontamination," of IPRA Volume VIII state that evacuees and emergency workers will be monitored for radioactive contamination and, if necessary, decontaminated at designated congregate care facilities. Section 3A(8) states that RAFT monitoring and decontamination teams are responsible for directing decontamination activities and for the radiation monitoring of emergency personnel, vehicles, and equipment. They will ensure that procedures are followed to avoid the unwarranted spread of radioactive contamination and will coordinate with other agencies as necessary.

Section 1E(5)(b) of IPRA Volume 1 states that monitoring will be performed utilizing portal and hand-held monitoring instruments. The IDNS provides decontamination equipment. In RAI 13.3-13(j), the staff asked the applicant to describe the State and local organization-specific action levels for determining the need for decontamination of emergency workers, equipment and vehicles, and the general public and their possessions. In response to RAI 13.3-13(j), the applicant stated that Section 2O(4) of IPRA Volume VIII provides such a description. Section 1E(4) of IPRA Volume I also provides a general statement about decontamination.

Section 11.2.5, "Decontamination of Relocated Personnel," of the EGC ESP Emergency Plan states that nonessential onsite personnel may be evacuated to an offsite relocation center or assembly area. Radiological controls personnel at that location will monitor evacuees and determine the need for decontamination. Existing and temporary facilities to limit contamination and exposure will be utilized and established at the site as necessary during an emergency situation. In the event that decontamination of evacuees is not locally possible, personnel will be sent to designated locations for monitoring and decontamination. Provisions for extra clothing will be made, and suitable decontaminates will be available for the expected type of contamination, particularly with regard to skin contamination.

Section 11.2.3.1, "Contamination Control Means," of the EGC ESP Emergency Plan states that personnel found contaminated will normally be attended to at decontamination areas located onsite. Temporary decontamination areas can also be set up inside at various locations. Decontamination showers and supplies will be provided onsite with additional personnel decontamination equipment and capabilities. Shower and sink drains in the controlled area will be routed to the miscellaneous waste processing system, where the liquid will be processed and monitored before discharge. Potentially contaminated emergency vehicles will be surveyed before they are allowed to leave the EGC ESP facility or offsite assembly area. If the survey area is not suitable for monitoring and decontamination because of radiological or other concerns, vehicles will be surveyed at an alternate location. Section 11.2.4, "Contamination Control Measures," also states that, if personnel leaving contaminated areas are found contaminated above acceptable levels, they will be decontaminated in accordance with future EGC ESP facility procedures. If normal decontamination procedures do not reduce personnel contamination to acceptable levels, the case will be referred to a competent medical authority.

Supplies, instruments, and equipment that are in contaminated areas or have been brought into contaminated areas will be monitored before removal. If found contaminated, they will be decontaminated using normal EGC ESP facility decontamination techniques or may be disposed of as radioactive waste.

Sections 11.2.3.1 and 11.2.4 of the EGC ESP Emergency Plan discuss the means for decontaminating personnel, vehicles, supplies, instruments, and equipment. In RAI 13.3-9, the NRC asked the applicant to describe the means for decontaminating personnel wounds. In response to RAI 13.3-9, the applicant stated that the means for decontaminating personnel wounds will be wound-specific and determined on a case-by-case basis. Life-threatening wounds will be decontaminated at the John Warner Hospital "hot" emergency room by trained medical personnel with the support of station radiological controls personnel. Nonlife-threatening wounds will be decontaminated by radiological controls personnel using procedures for decontamination of personnel with skin or clothing contamination with the assistance of emergency response personnel (e.g., emergency medical technicians or ambulance personnel).

In RAI 13.3-13(k), the staff asked the applicant to describe the State and local organizations' means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment. In response to RAI 13.3-13(k), the applicant stated that Section 2O(4) of IPRA Volume VIII describes the State and local organizations' means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment, and also states that such personnel will be transported to a health facility. Section 1E(4) of IPRA Volume I also provides a general statement about decontamination.

13.3.3.12.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the

applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.B., and IV.E. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those that apply to major feature K, "Radiological Exposure Control."

13.3.3.12.3 Technical Evaluation

The staff reviewed the applicant's response to RAI 13.3-9 and found it to be acceptable based on the evaluation below.

In the EGC ESP Emergency Plan, the applicant adequately describes guidelines for dose limits appropriate to removing injured persons, undertaking corrective actions, performing assessment actions, performing field radiological measurements in the plume EPZ, providing first aid, performing personnel decontamination, providing ambulance service, and providing medical treatment services.

In the EGC ESP Emergency Plan, the applicant describes an onsite radiation protection program to be implemented during emergencies, including methods to implement dose limits. The applicant used the general guidance on dose limits for workers performing emergency services in EPA 400.

The EGC ESP Emergency Plan and IPRA Volumes I and VIII describe how each organization would determine the doses received by emergency personnel involved in any nuclear accident, including volunteers.

The EGC ESP Emergency Plan and the State and local plans describe a decision chain for each organization for authorizing emergency workers to incur exposures in excess of the EPA dose limits for workers performing emergency services.

The EGC ESP Emergency Plan describes how the applicant would acquire and distribute dosimeters, both direct-reading and permanent record devices.

However, with regard to RAIs 13.3-13(i-k), the staff needs additional information about how the State will acquire and distribute dosimeters, both direct-reading and permanent record devices. Also, the staff needs additional information related to the State and local organization-specific action levels for determining the need for decontamination of emergency workers, equipment and vehicles, and the general public and their possessions. The staff also needs a description

of State and local organizations' means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment. These items are **Open Item 13.3-6**.

13.3.3.12.4 Conclusions

Based upon the information contained in Section 13.3.3.12.1 of this SER, to obtain acceptance of major feature K the applicant should provide additional information related to dosimetry and decontamination in RAls 13.3-13 (i-k). Therefore, the staff concludes that the applicant should provide additional information about radiological decontamination to support acceptance of proposed major feature K. The staff will determine acceptability of this major feature and document its determination in the FSER, based on information the applicant has provided to date and its response to Open Item 13.3-6. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.13 Medical and Public Health Support (Major Feature L)

13.3.3.13.1 Technical Information in the Application

Section 12.1 of the EGC ESP Emergency Plan states that arrangements, confirmed by letter of agreement every 2 or more calendar years, will also be maintained by the corporate office of a qualified major medical facility well equipped and staffed for dealing with persons having radiation injuries. John Warner Hospital in Clinton, Illinois, will be the primary supporting medical facility for injured persons who are contaminated with radioactivity. Whenever necessary, such persons will be transferred to this major hospital facility for extended specialized treatment. Section 12.1 also states that the applicant will have medical consultants available to the hospital's staff who will provide the direction of the special care necessary for the treatment of persons having radiation injuries, as described in Section 3.4.5 of the EGC ESP Emergency Plan.

Section 12.3, "Medical Services Facilities," of the EGC ESP Emergency Plan states that, since radiation injuries involve specialized diagnosis and treatment, Exelon corporate emergency preparedness personnel maintain an agreement with the REAC/TS. Section 3.4.5 of the EGC ESP Emergency Plan provides additional information related to REAC/TS. REAC/TS is a radiological emergency response team of physicians, nurses, health physicists, and necessary support personnel on 24-hour call to provide consultative or direct medical or radiological assistance at the REAC/TS facility or at the accident site. Specifically, the team has expertise in and is equipped to conduct medical and radiological triage; decontamination procedures and therapies for external contamination and internally deposited radionuclides, including chelation therapy; diagnostic and prognostic assessments of radiation-induced injuries; and radiation dose estimates by methods that include cytogenetic analysis, bioassay, and *in vivo* counting.

Sections 1H, "Overview, Medical Services," and 1E(5)(e), "Basic Functions, Parallel Actions, Emergency Medical Services," of IPRA Volume I explain that hospitals statewide are provided with a telephone number, maintained on a 24-hour basis by IDNS, which medical personnel can use to obtain advice or technical assistance. In accordance with the Illinois Emergency Medical

Services Act, an individual who may be contaminated as a result of a reactor accident will be transported to an assigned medical treatment facility.

Section 2A of IPRA Volume VIII states that IEMA and IDNS maintain a listing of hospitals with specific capabilities to treat radiologically contaminated and injured individuals. The IDNS maintains a listing of all medical facilities within the State with capabilities related to the evaluation of radioactive exposure and uptake, including those hospitals under contract to the nuclear utilities for the treatment of onsite injured and exposed or contaminated personnel.

13.3.3.13.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.B., and IV.E. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of the emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to major feature L, "Medical and Public Health Support."

13.3.3.13.3 Technical Evaluation

In the EGC ESP Emergency Plan and State and local plans, the applicant describes the contacts and arrangements made for local and backup hospital and medical services having the capability to evaluate radiation exposure and uptake.

The State plan identifies that lists have been developed to indicate the location of public, private, and military hospitals and other emergency medical services facilities within the State, or contiguous States, considered capable of providing medical support for any contaminated injured individual. The listing will include the name, location, type of facility and capacity, and any special radiological capabilities. Contacts and arrangements made in developing this list are described.

13.3.3.13.4 Conclusions

As discussed in Section 13.3.3.13.1 of this SER, the EGC ESP Emergency Plan and IPRA Volumes I and VIII adequately describe contacts and arrangements for hospital and medical

services. Also, IPRA Volume I adequately describes lists of detailed information and specific capabilities related to medical services facilities in support of the ESP site. Based on its review, the staff concludes that the proposed major feature L is consistent with the guidelines in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.B., and IV.E, insofar as it describes the essential elements of advanced planning that have been considered for medical and public health support, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.14 Radiological Emergency Response Training (Major Feature O)

13.3.3.14.1 Technical Information in the Application

Section 15.1, "Assurance of Training," of the EGC ESP Emergency Plan states that the emergency plan training program will assure the training, qualification, and requalification of individuals who may be called upon for assistance during an emergency. In addition, specific emergency response task training, prepared for each emergency plan position, will be described in lesson plans and study guides. The ERO training program will contain the lesson plans, study guides, and written tests. Responsibilities for implementing the training program will be contained in EGC ESP facility procedures. Section 15.5, "General, Initial, and Annual Training Program Maintenance," of the EGC ESP Emergency Plan describes the responsibilities for the training and retraining of the ERO personnel, as well as their initial qualification and requalification. Section 15.1 outlines the training to be provided to support organizations that may be called upon to provide assistance in the event of an emergency. Section 15.4, "Emergency Response Organization Training Program," of the EGC ESP Emergency Plan states that the applicant's ERO personnel who will be responsible for implementing this plan will receive specialized training. Section 15.2, "Functional Training of the Emergency Response Organization," of the EGC ESP Emergency Plan states that, in addition to general and specialized classroom training, members of the applicant's ERO will receive periodic performance-based emergency response training.

Section 15.4.1, "Directors, Managers, and Coordinators within the Facility and Corporate Emergency Response Organization," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for directors, managers, and coordinators within the facility and corporate ERO.

Section 6B, "Preparedness Functions," in IPRA Volume I and Section 2L, "DeWitt County Training," of IPRA Volume VIII explain that all State and local emergency personnel receive annual initial and refresher training provided jointly by IEMA and IDNS. The training is comprehensive and covers operational and technical aspects of the IPRA, basics of radiological response, and the specific duties for which each organization and individual are responsible. The training program includes command and coordination, protective actions, and parallel actions.

Section 15.4.2, "Personnel Responsible for Accident Assessment," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for personnel responsible for accident assessment.

Section 6B of IPRA Volume I and Section 2L in IPRA Volume VIII explain that, at the State level, IDNS performs accident assessments and is responsible for conducting a confirmatory, independent assessment of the accident. State accident assessment personnel work out of the IDNS Radiological Emergency Assessment Center located in Springfield, Illinois. Annual initial and refresher training to all staff is provided on basic radiation principles, detection, and the IPRA concept of operations.

Section 15.4.3, "Radiological Monitoring Teams and Radiological Analysis Personnel," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for radiological monitoring teams and radiological analysis personnel.

Section 6B of IPRA Volume I and Section 2L in IPRA Volume VIII state that the RAFT performs the field radiological functions of confirmatory accident assessment, monitoring, and decontamination. Upon request, ISP District 6 and 8 will monitor for possible radioactive release during an incident at CPS before the arrival of the RAFT. In a joint effort, IEMA and IDNS provide annual initial and refresher training to all State and local personnel.

Section 15.4.4, "Police, Security, and Fire Fighting Personnel," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for security and fire fighting personnel. Section 15.4.4.1, "Local Police and Fire Fighting Personnel," of the EGC ESP Emergency Plan states that local police and fire departments will be invited to receive training as outlined in Section 15.1.

Section 6B of IPRA Volume I and Section 2L of IPRA Volume VIII state that all State, local police, security, and firefighting personnel receive the Annual Emergency Response Training Program provided by IEMA. The training focuses on the operational aspects of the plan and addresses the unique radiological emergency response skills that workers would not normally acquire as part of their usual job. The training also addresses subjects of a technical nature such as KI, contamination/decontamination, and a hands-on practical application phase covering operation and maintenance of dosimetry equipment.

Section 15.3, "First Aid Response," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for first aid and rescue personnel.

Section 6B of IPRA Volume I and Section 2L of IPRA Volume VIII state that all first aid and rescue team personnel receive the Annual Emergency Response Training Program provided by IEMA. The training focuses on the operational aspects of the plan and addresses the unique radiological emergency response skills that workers would not normally acquire as part of their usual job. The training also addresses subjects of a technical nature such as KI, contamination/decontamination, and a hands-on practical application phase covering operation and maintenance of dosimetry equipment.

Section 15.4.7, "Local Support Service Personnel," of the EGC ESP Emergency Plan states that local support service personnel providing assistance during an emergency will be invited to receive the training as outlined in Section 15.1 of the EGC ESP Emergency Plan.

Section 6B of IPRA Volume I and Section 2L in IPRA Volume VIII state that all local support services personnel receive the Annual Emergency Response Training Program provided by IEMA. The training focuses on the operational aspects of the plan and addresses the unique

radiological emergency response skills that workers would not normally acquire as part of their usual job. The training also addresses subjects of a technical nature such as KI, contamination/decontamination, and a hands-on practical application phase covering operation and maintenance of dosimetry equipment.

Section 15.4.8, "Medical Support Personnel," of the EGC ESP Emergency Plan states that onsite medical service personnel will receive specialized training in the handling of contaminated victims and hospital interface. In addition, offsite ambulance and hospital personnel will be offered annual training in accordance with the program described in Section 15.1 of the EGC ESP Emergency Plan.

Section 6B of IPRA Volume I and Section 2L of IPRA Volume VIII state that, in accordance with the guidance of NUREG-0654/FEMA-REP-1, Revision 1, IDNS maintains a listing of all medical facilities within the State with capabilities related to the evaluation of radioactive exposure and uptake, including those hospitals under contract to the nuclear utilities for the evaluation and treatment of onsite injured and exposed or contaminated personnel. The IDNS provides a guide for handling, transporting, evaluating, and treating patients accidentally exposed to radiation or contaminated with radioactive materials. Offsite ambulance and hospital personnel will be offered annual training based on this guidance.

Section 15.4.10, "Communication Personnel," of the EGC ESP Emergency Plan describes the specialized internal training that will be provided for communications personnel.

Section 6B of IPRA Volume I and Section 2L of IPRA Volume VIII state that, at the State and county level, public information personnel receive the Annual Emergency Response Training Program provided by IEMA. The training covers all operational and technical aspects of IPRA. State and county plans do not include the major features of specific training for personnel responsible for disseminating emergency information. Information is also provided annually to the media in the vicinity of the power plant.

13.3.3.14.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant's emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.F. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of complete and integrated emergency plans. According to 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application.

Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those that apply to major feature O, "Radiological Emergency Response Training."

13.3.3.14.3 Technical Evaluation

The EGC ESP Emergency Plan and IPRA Volumes I and VIII adequately describe a training program for instructing and qualifying personnel who will implement radiological emergency response plans. Specialized initial training and periodic retraining is provided in the following categories:

- directors or coordinators of the response organizations
- personnel responsible for accident assessment
- radiological monitoring teams and radiological analysis personnel
- police, security, and firefighting personnel
- first aid and rescue personnel
- local support services personnel, including civil defense/emergency services personnel
- medical support personnel
- personnel responsible for transmission of emergency information and instructions

13.3.3.14.4 Conclusions

Based upon the information contained in Section 13.3.2.2.14.1 of this SER, the applicant described a radiological emergency response training program for personnel who will implement the radiological emergency response plans. Based on its review, the staff concludes that the proposed major feature O is consistent with the guidelines in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III and IV.F, insofar as it describes the essential elements of advanced planning that have been considered for radiological emergency response training, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of emergency plans and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.

13.3.3.15 Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans (Major Feature P)

13.3.3.15.1 Technical Information in the Application

Section 16.1, "Emergency Preparedness Staff Training" of the EGC ESP Emergency Plan describes the training of each member of the emergency preparedness staff as involving at least one of the following activities at least once a calendar year:

- training courses specific or related to emergency preparedness
- observation of, or participation in, drills and/or exercises at other facilities
- participation in industry review and evaluation programs

- participation in regional or national emergency preparedness seminars, committees, workshops, or forums
- specific training courses in related areas, such as systems, equipment, operations, radiological protection, or problem identification and resolution

Section 6B of IPRA Volume I and Section 2L of IPRA Volume VIII state that State and county personnel responsible for the IPRA planning functions receive annual initial and refresher training provided jointly by IEMA and IDNS. The training is comprehensive and covers the operational and technical aspects of IPRA, basics of radiological response, and the specific duties for which each organization and individual are responsible.

Section 16.2, "Authority for the Emergency Preparedness Effort," of the EGC ESP Emergency Plan states that the applicant's officers will be responsible for the safe and reliable operation of the EGC ESP facility. The issuance and control of this plan and the activities associated with emergency preparedness at EGC will be the overall responsibility of the Vice President of Licensing and Regulatory Affairs. In RAI 13.3-10, the staff asked the applicant to identify by title the individual who will have overall authority and responsibility for radiological emergency response planning. In addition, the staff asked the applicant to identify an emergency planning coordinator with responsibility for the development and updating of emergency plans and for coordination of these plans with other response organizations.

In response to RAI 13.3-10, the applicant stated that the Vice President of Licensing and Regulatory Affairs will have overall authority and responsibility for radiological response planning, as indicated in Section 16.2 of the EGC ESP Emergency Plan. However, Section 16.3, "Responsibility for Development and Maintenance of the Plan," identifies the emergency planning coordinator as the emergency preparedness manager, along with his or her authority and responsibilities, as discussed in Section 16.3.1.1, "Program Administration," of the EGC ESP Emergency Plan. Section 16.3.1.1 states that the MWROG emergency preparedness manager is responsible for developing and maintaining the emergency plan.

Section 6C, "Preparedness Functions, Plan Maintenance and Updating," of IPRA Volume I states that IEMA and IDNS are assigned the responsibility for overseeing the updating of the IPRA, including the plans, SOPs, and training modules. In RAI 13.3-13(I), the staff requested the title of the individual(s) at the State level with the overall authority and responsibility for radiological emergency response planning. In response to RAI 13.3-13(I), the applicant stated that, ultimately, the Governor has the overall authority and responsibility. However, within IEMA, Section 3A(3) of IPRA Volume I provides the requested information, which identifies that IEMA is responsible for emergency planning, and the director of IEMA is responsible for direction and control of IEMA operations.

Section 2N, "DeWitt County, Emergency Plan Maintenance," of IPRA Volume VIII states that DeWitt County defers responsibility for maintenance and updating IPRA to IEMA. The DeWitt County/Clinton ESDA coordinator is assigned the role of coordinating the planning, updating, and maintenance of the DeWitt County section of IPRA Volume VIII. Furthermore, each agency head is responsible for updating its agency's sections.

Section 16.3 of the EGC ESP Emergency Plan states that the MWROG emergency preparedness manager will be responsible for the overall Radiological Emergency

Preparedness Program associated with the EGC ESP site. Section 16.3.1.1 of the EGC ESP Emergency Plan states that the emergency preparedness manager is responsible for developing and maintaining the emergency plan, developing and maintaining 10 CFR 50.54(q) evaluations of changes to emergency planning documents, and ensuring integration of plans between the applicant and offsite agencies.

In RAI 13.3-13(m), the staff requested the title of the individual(s) at the State level who is designated as the emergency planning coordinator with responsibility for the development and update of emergency plans and for the coordination of these plans with other response organizations. In response to RAI 13.3-13(m), the applicant stated that, although no title is identified in Section 6C of IPRA Volume I, this section identifies that IEMA and IDNS are responsible for these activities. Appropriate IEMA and IDNS documents (e.g., procedures and position descriptions) provide the specific titles. The respective directors of IEMA and IDNS would be the positions with the identified responsibility.

Section 2N of IPRA Volume VIII states that, in DeWitt County, the Dewitt County/Clinton ESDA coordinator is assigned this responsibility.

Section 16.4, "Emergency Plan and Agreement Revisions," of the EGC ESP Emergency Plan states that the "Exelon Nuclear Standardized Radiological Emergency Plan" and supporting agreements will be reviewed on an annual basis. The annual plan review/update will include required changes identified during audits, assessments, training, drills, and exercises. The MWROG emergency preparedness manager will be responsible for determining which recommended changes are incorporated into a plan or emergency procedure revision. In those years when the review does not warrant a revision, a letter to that effect will be issued. In RAI 13.3-11, the staff requested that the applicant submit a description of the process for updating the agreements that support the "Exelon Nuclear Standardized Radiological Emergency Plan." In response to RAI 13.3-11, the applicant stated that agreements supporting the "Exelon Nuclear Standardized Radiological Emergency Plan" are reviewed on an annual basis as identified in the first sentence of Section 16.4 of the EGC ESP Emergency Plan (i.e., the phrase "and supporting agreements" is included specifically to identify that annual reviews are also applicable to the agreements). As indicated in the second sentence, this review includes updating as necessary. The process for updating an agreement is the same as the process for obtaining the original agreement.

Section 6C of IPRA Volume I states that, at the State level, IEMA ensures that each State agency reviews its portion of the plan annually, and any changes deemed necessary by lessons learned during the drills and exercises and from actual emergency response, as well as those resulting from agency reorganization, address, and telephone changes, will be made during the IPRA update process. The IEMA is also responsible for ensuring that the same requirement is met at the local level.

Section 2N of IPRA Volume VIII states that changes at the local level are reported to the DeWitt County ESDA coordinator, who keeps a record of changes and forwards them to IEMA.

Section 16.5, "Emergency Plan Distribution," of the EGC ESP Emergency Plan states that the emergency plan for the EGC ESP facility will not be distributed for implementation. The final emergency plan and future EGC ESP facility implementing procedures will be distributed on a controlled basis before initial fuel loading to the ERFs, selected Federal, State, and local

agencies, and other appropriate locations requiring them in association with pertinent activities. Controlled document holders will be issued revision changes upon approval. Procedures that control the revision of the emergency plan will require the use of revision bars and individual page identifications (i.e., section of plan and revision number).

Sections 6C of IPRA Volume I and Section 2N of IPRA Volume VIII state that all State, local, and private organizations, upon review and update of their sections of the plan, are required to forward to IEMA either a statement saying that no changes are necessary or a copy of their portions with all revisions clearly marked and dated.

The table of contents for the EGC ESP Emergency Plan is provided on pages iii–xi. Appendix B, “Requirements Matrix,” to the EGC ESP Emergency Plan contains a cross-reference of the planning standards and evaluation criteria in Supplement 2. In RAI 13.3-19, the staff asked the applicant to provide an updated version of Table B-1, “Requirements Matrix,” of Appendix B to the EGC ESP Emergency Plan. In response to RAI 13.3-19, the applicant stated that it updated Table B-1 of Appendix B to the EGC ESP Emergency Plan to include the revisions that the NRC identified in this RAI.

There are tables of contents at the beginning of each section for the State and local plans. The State and local plans also contain a “Planning Standards and Evaluation Criteria Correlation Document,” which includes a cross-reference to NUREG-0654/FEMA-REP-1, Revision 1, “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” dated November 1980.

13.3.3.15.2 Regulatory Evaluation

In Section 1.1 of the EGC ESP Emergency Plan, the applicant states that it developed the plan to comply with 10 CFR 52.17, using the guidance in Supplement 2. In Section 1.2 of the EGC ESP Emergency Plan, the applicant states that the EGC ESP Emergency Plan, in conjunction with future implementing and administrative procedures, documents the methods by which the applicant’s emergency preparedness program meets the planning standards in 10 CFR 50.47(b) and the requirements in Appendix E to 10 CFR Part 50. The staff finds that the applicant has identified the regulatory requirements and guidance applicable to the proposed major features of emergency plans for an ESP application.

In its review of the application, the staff considered the regulatory requirements in 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A. Under 10 CFR 52.17(b)(2)(i), an ESP applicant may propose major features of the emergency plans for NRC review and approval, in consultation with FEMA, in the absence of a complete and integrated emergency plan. In accordance with 10 CFR 52.18, after consultation with FEMA, the NRC must determine whether the major features of the emergency plans submitted under 10 CFR 52.17(b)(2)(i) are acceptable. Supplement 2 and RS-002 provide guidance concerning the review and evaluation of emergency planning information provided in an ESP application. Supplement 2 also provides specific evaluation criteria for major features of emergency plans, including those which apply to major feature P, “Responsibility for the Planning Effort: Development, Periodic Review, and Distribution of Emergency Plans.”

13.3.3.15.3 Technical Evaluation

The staff reviewed the applicant's response to RAIs 13.3-10, 13.3-11, 13.3-13(l-m), and 13.3-19 and found them to be acceptable based on the evaluation below.

The EGC ESP Emergency Plan and IPRA Volumes I and VIII adequately describe (1) the training of individuals responsible for the planning effort, (2) the individual with the overall authority and responsibility for radiological emergency response planning, (3) the designation of an emergency planning coordinator with responsibility for the development and updating of emergency plans, (4) the coordination of these plans with other response organizations, (5) the update of emergency plans and agreements, as needed, (6) the process for approved changes to the emergency response plans to be forwarded to all organizations and appropriate individuals with responsibility for the implementation of the plans, (7) the dating and marking of revised pages to show where changes have been made, and (8) a specific table of contents.

The EGC ESP Emergency Plan contains a matrix that adequately cross-references the criteria in Supplement 2. Volumes I and VIII of IPRA contain a matrix that appropriately cross-references the criteria in NUREG-0654/FEMA-REP-1, Revision 1, rather than the criteria in Supplement 2.

13.3.3.15.4 Conclusions

As discussed in Section 13.3.3.15.1 of this SER, the applicant describes the development, review, distribution, and update of emergency plans, including designation of an emergency planning coordinator and identification of individuals with emergency planning responsibility. In addition, the applicant has described training for those responsible for the planning effort. Based on its review, the staff concludes that the proposed major feature P is consistent with the guidelines in RS-002 and Supplement 2. Therefore, it is acceptable and meets the requirements of 10 CFR 52.17(b)(2)(i), 10 CFR 52.18, and 10 CFR Part 50, Appendix E, Sections III, IV.A., IV.F., and IV.G, insofar as it describes the essential elements of advanced planning that have been considered for the responsibility for the planning effort, as set forth above. The applicant provided other information in the application that is outside the scope of the staff's review of the major features of the applicant's emergency plan and is not discussed in this SER. Therefore, the staff did not make findings regarding its acceptability.