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52.17

October 27, 2005

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Early Site Permit (ESP) Application for the Clinton ESP Site
Docket No. 52-007

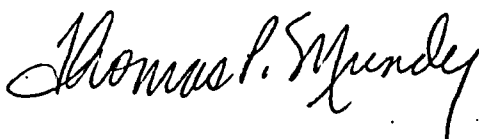
Subject: Revised Response to Request for Additional Information Letter No. 12

- Ref: 1) Letter, U.S. Nuclear Regulatory Commission (N. V. Gilles) to Exelon Generation Company, LLC, (M. Kray), dated December 9, 2004, *Request for Additional Information (RAI) Letter No. 12 – Exelon Early Site Permit (ESP) Application for the Clinton ESP Site (TAC No. MC1122)*
- 2) Letter, Exelon Generation Company, LLC, (M. Kray) to U.S. Nuclear Regulatory Commission, dated January 24, 2005, *Response to Request for Additional Information Letter No. 12*

Enclosed are revised responses to certain evacuation time estimate related RAIs (Ref. 1) requested by the NRC in connection with the Exelon Generation Company, LLC ESP application. The enclosed information is provided in response to verbal requests made by the NRC for clarification of the information provided in Ref. 2.

Please contact Eddie Grant of my staff at 850-598-9801 if you have any questions regarding this submittal.

Sincerely yours,



Thomas P. Mundy
Director, Project Development

D073

U.S. Nuclear Regulatory Commission

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TPM/erg

cc: U.S. NRC Regional Office (w/ enclosures)
Mr. John P. Segala (w/ enclosures)

Enclosures

AFFIDAVIT OF THOMAS P. MUNDY

State of Pennsylvania

County of Chester

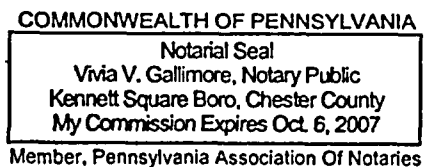
The foregoing document was acknowledged before me, in and for the County and State aforesaid, by Thomas P. Mundy, who is Director, Project Development, of Exelon Generation Company, LLC. He has affirmed before me that he is duly authorized to execute and file the foregoing document on behalf of Exelon Generation Company, LLC, and that the statements in the document are true to the best of his knowledge and belief.

Acknowledged and affirmed before me this 27th day of October, 2005.

My commission expires 10-6-07.

Vivia V. Gallimore

Notary Public



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Enclosure

NRC Letter Dated: 12/10/2004

NRC RAI No. 13.3-20

The revised responses include RAI No. 13.3-20(b), Attachment A, and Attachment B from the January 24, 2005 response.

The revisions are identified by left side change bars.

The remaining portions of Exelon's January 24, 2005 responses are unchanged.

NRC Letter Dated: 12/10/2004

NRC RAI No. 13.3-20 (b)

b) Provide site specific distributions for hospitals, nursing homes and correctional facilities addressed in the 1993 ETE Study or describe other studies that were used to arrive at the assumption that these facilities would commence evacuation between one to two hours after the 15 minute notification.

EGC RAI ID: R17-2

EGC RESPONSE:

The departure time distribution used in the 1993 ETE study for the special facilities (including hospitals, nursing homes and correctional facilities) was formulated (with departures following the decision to evacuate as indicated in Attachment A, Table A-1) based on information obtained from individual facilities and from county emergency management officials responsible for coordinating transportation resources for transport-dependent residents and special facilities. These assumptions were reviewed with the Illinois Emergency Management Agency and the responsible county agencies prior to performing the ETE analysis.

For the evacuation simulations, the goal is to estimate evacuation times for the entire evacuating population, including special facilities. The evacuation model, NETVAC, does not distinguish among vehicles originating from different nodes or facilities, and the evacuation model design does not allow a different departure time distribution to be specified for each facility. Analysis for individual facilities is generally a manual effort, utilizing the evacuation model results to estimate travel times along specific routes. [See response to RAI 13.3-20 (c).]

ASSOCIATED EGC ESP APPLICATION REVISIONS:

None

ATTACHMENTS:

None

Analysis of Special Facility Evacuation Times

Evacuation time estimates were developed for individual special facilities. Departure times for individual facilities were estimated based on information provided by the DeWitt County Emergency Services Disaster Agency (ESDA), the Clinton Unit 15 School District, and Dr. John Warner Hospital. The NETVAC results from the 1993 study were used to estimate delays due to local traffic congestion along the primary route evacuation route leading from each facility out of the EPZ. NETVAC results were reviewed for the applicable "worst-case" evacuation scenario (Winter Day for schools, Summer Weekday for the jail, hospital and nursing home). The evacuation time estimates for each facility are summarized in Table A-1.

The DeLand schools are able to evacuate quickly, because the local district has adequate buses to evacuate the two schools located inside the EPZ. The Clinton Unit school district has 27 buses. In order to evacuate all of the public schools in Clinton, additional buses from outside the district will be required. As bus drivers report for an evacuation, buses would be allocated first to the Webster and Douglas elementary schools, followed by Lincoln and Washington elementary schools. The remaining local buses would be used to evacuate the County Jail, and to begin evacuating Clinton High School and Junior HS. Buses from outside the district would be used to evacuate the remaining students at Clinton High School and Junior HS, Clinton Christian Academy, plus Crestview Nursing Home, Warner Hospital and any transport-dependent residents. The two buses needed to evacuate Clinton Christian Academy can be obtained from communities just outside of the EPZ (Heyworth, Farmer City). For the remaining facilities, buses will come from as far away as Decatur, 22 miles distance (30 to 40 minutes travel time) from Clinton.

Ambulances and wheel-chair vans will be needed to evacuate non-ambulatory patients/residents from the hospital and nursing home. There are three ambulances available locally in Clinton. Additional vehicles will be obtained via "mutual aid" agreements with facilities outside of the EPZ. Again, some of these vehicles will come from as far away as Decatur, 22 miles distance (30 to 40 minutes travel time) from Clinton.

For adverse weather conditions, local congestion (queuing and spillback conditions) is predicted by NETVAC along the evacuation routes serving Douglas and Webster schools and the DeWitt County Jail. No congestion was predicted during adverse weather along routes serving the other special facilities, and no significant traffic congestion was predicted along the routes serving any of the facilities during fair weather.

Estimated evacuation times for special facilities range from 78 to 113 minutes, during normal weather, and from 79 to 177 minutes for adverse weather. The DeLand schools have the shortest evacuation times, while the DeWitt County Jail has the longest evacuation times. All of the special facility evacuation times are shorter than the corresponding ETEs for the general public.

Table A-1

Evacuation Time Estimates for Special Facilities in EPZ for Clinton Station

Schools	DeLand Elementary and Middle Schools	Douglas Elementary	Webster Elementary	Clinton Junior High
Entry node	58	38	908	34**
Staff	11	16	19	41
Students	147	253	255	467
Buses				
Total required	3	5	5	8
Transportation resources				
Local District	3	5	5	2
Outside of EPZ				6
Notification Time (minutes)	15	15	15	15
Mobilization Time for staff, students	15	15	15	15
Mobilization time for local buses, drivers (min.)	60	60	60	60
Additional Buses				
Mobilization time for buses, drivers (min.)	N/A	N/A	N/A	60
Travel time to schools				30-40
Total mobilization time				90-100
Facility Evacuation Time				
Total elapsed time to depart	75	75	75	105-115
Travel time out of EPZ (min.)				
Fair weather	3	8	8	5
Adverse weather	4	57*	42*	7
Total evacuation time (min.)				
Fair weather	78	83	83	110
Adverse weather	79	132*	117*	122
General public evacuation time	Sub-Areas 1,4	Sub-Areas 1,7	Sub-Areas 1,7	Sub-Areas 1,7
Fair weather	185	185	185	185
Adverse weather	205	240	240	240

* travel time estimates for Douglas, Webster include estimated delay due to local congestion

** locations of Clinton High School and Junior High School have changed since the 1993 study

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Enclosure – RAI 13.3-20, Attachment A

Table A-1 (continued)

Schools	Lincoln, Washington Elementary Schools	Clinton Christian Academy	Clinton High School
Entry node	907	40	39**
Staff	33	8	53
Students	546	100	738
Buses			
Total required	10	2	13
Source of buses			
Local District	10	N/A	2
Outside of EPZ		2	11
Notification Time (minutes)	15	15	15
Mobilization Time for staff, students	15	15	15
Mobilization time for local buses, drivers (min.)	60	N/A	60
Additional Buses			
Mobilization time for buses, drivers (min.)	N/A	60	60
Travel time to schools		15-20	30-40
Total mobilization time		75-80	90-100
Facility Evacuation Time			
Total elapsed time to depart	75	90-95	75-115
Travel time out of EPZ (min.)			
Fair weather	5	5	5
Adverse weather	7	7	7
Total evacuation time (min.)			
Fair weather	80	100	110
Adverse weather	82	102	122
General public evacuation time	Sub-Areas 1,7	Sub-Areas 1,7	Sub-Areas 1,7
Fair weather	185	185	185
Adverse weather	240	240	240

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Table A-1 (concluded)

Special Facility	DeWitt County Jail	Dr. John Warner Hospital	Crestview Nursing Home
Entry node	906	40	47
Staff	14	175	60
Patients or Inmates	54	43	103
Buses			
Bus or Van - total required	3	1	2
Local	3	0	0
Ambulance - total required		4	8
Local		3	0
Notification Time (minutes)	15	15	15
Mobilization Time for patients	90	30-60	30-60
Mobilization time for local drivers (min.)	15	5-10	N/A
Additional Vehicles			
Mobilization time (min.)	N/A	15-30	15
Travel time to facility		15-40	30-40
Total mobilization time		70	55
Facility Evacuation Time			
Total elapsed time to depart	105	85	75
Travel time out of EPZ (min.)			
Fair weather	8	8	8
Adverse weather	72*	12	12
Total evacuation time (min.)			
Fair weather	113	93	83
Adverse weather	177*	97	87
General public evacuation time	Sub-Areas 1,7	Sub-Areas 1,7	Sub-Areas 1,7
Fair weather	185	185	185
Adverse weather	240	240	240

Transport- Dependent Population

The estimated number of transport-dependent households by Sub-Area is summarized in Table B-1. The number of transport-dependent households in the EPZ is 302; most of these are located in the city of Clinton (in Sub-Area 7). The 2000 Census (SF-3) tabulates the number of vehicles per household; transport-dependent households were estimated based on the reported number of occupied households with no vehicles. Census data at Block Group level on average household size and vehicles per household were used to estimate values for each Sub-Area. The permanent population in the EPZ by Sub-Area was determined by Illinois Department of Nuclear Safety (IDNS) from 2000 Census data. This population (based on the geographic boundaries of the EPZ) is higher than the value of 12,358 reported in Section 2.3.2 of the Emergency Plan. The Emergency Plan value represents the population residing inside the 10-mile radius; several of the Sub-Areas extend outside of the 10-mile radius and contain additional population. The 1990 and 2000 population by Sub-Area is compared in Table B-2.

Table B-1. Estimates of Transport-Dependent Population in Clinton Station EPZ

	Permanent Population	Households	
		Auto-owning	Transport Dependent
Sub-Area 1	1,662	626	13
Sub-Area 2	248	93	2
Sub-Area 3	512	193	4
Sub-Area 4	243	92	2
Sub-Area 5	265	100	2
Sub-Area 6	1,371	517	11
Sub-Area 7	7,926	2,712	259
Sub-Area 8	1,041	392	8
Total in EPZ	13,268	4,725	302*

Based on 2000 Census data (SF-1 and SF-3)

* Total of Sub-Areas 1-8 is only 301 due to round-off of the Sub-Area values to whole numbers.

Table B-2. Change in Sub-area Populations for Clinton Station EPZ

	2000 Population	1990 Population
Sub-Area 1	1,662	1,441
Sub-Area 2	248	233
Sub-Area 3	512	429
Sub-Area 4	243	200
Sub-Area 5	265	207
Sub-Area 6	1,371	782
Sub-Area 7	7,926	8,081
Sub-Area 8	1,041	1,031
Total in EPZ	13,268	12,404