From: Nanette Gilles
To: Eddie Grant; Tom Mundy
Date: Thu, Jul 8, 2004 2:34 PM
Subject: DRAFT REQUESTS FOR ADDITIONAL INFORMATION

Please find attached a package of preliminary questions, in the form of draft requests for additional information (RAIs) for the Clinton ESP review. These questions pertain to the staff's review in the areas of meteorology, geography and demography, radiological consequences of accidents, and emergency preparedness. Exelon may request a phone call to seek clarification on the questions before they are issued by letter. Please contact me to let me know if you wish to arrange such a call or if you have other questions.

Sincerely,

Nanette Gilles
Senior Project Manager
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Phone (301) 415-1180

CC: Daniel Barss; Jay Lee; Michael Scott; R. Brad Harvey; Raj Anand; Robert Moody

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From: Nanette Gilles

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Met RAI (3).wpd	5489	Thursday, July 8, 2004 2:27 PM
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DRAFT
Clinton ESP Application
SSAR Section 2.3, Meteorology
Request for Additional Information (RAI)

SSAR Section 2.3.1, Regional Climatology

RAI 2.3.1-10

The site characteristic snow load being proposed is based, in part, on a maximum-recorded monthly snowfall in the Clinton ESP site area of 24.7 inches at Peoria, IL in January 1979. However, a higher maximum-recorded monthly snowfall, 30.5 inches, was recorded at Decatur, IL in March 1906 (Reference: Illinois State Climatologist Office website http://www.sws.uiuc.edu/atmos/statecli/Summary/112193.htm). Please revise the proposed site characteristic snow load using the higher maximum-recorded monthly snowfall recorded at Decatur.

SSAR Section 2.3.2, Local Meteorology

RAI 2.3.2-6

An hourly wet bulb temperature should never exceed the coincident dry bulb temperature. Consequently, please explain why nearly all of the CPS wet bulb temperature values presented in SSAR Table 2.3-13 exceed the corresponding (dry bulb) temperature values presented in SSAR Table 2.3-9.

SSAR Section 2.3.4, Short-Term Diffusion Estimates

RAI 2.3.4-1

Please explain in more detail how the 50% EAB and LPZ atmospheric dispersion factors (χ/Q values) were determined. In particular, please explain the apparent discrepancy in the SSAR where Section 2.3.4.3 states that these values represent direction independent (i.e., overall site) values whereas Table 2.3-52 states that these are maximum sector values.

RAI 2.3.4-2

Because potential release points could be located anywhere within the plant envelope area being proposed for the Clinton ESP site, please recalculate the EAB and LPZ χ/Q values using the shortest distances between the ESP plant envelope boundaries and the 1,025-m EAB radius and 4,018-m LPZ radius for each downwind sector. Also provide a copy of the resulting PAVAN input and output files used to generate the accident CHI/Q values that are being proposed as Site Characteristic values.

DRAFT
Exelon Early Site Permit Application
SSAR Sections 1.4, 2.1, & 3.3
Requests for Additional Information

SSAR Section 1.4, Plant Parameters Envelope

RAI 1.4-1

Please clarify how the "dose consequences" in PPE Table 1.4-1, Sections 9.3 and 10.1, relate to the site characteristics identified in the referenced SSAR Sections.

RAI 1.4-2

Should you delete "sec/m^3" from Section 9.3, "Dose Consequences," of Table 1.4-9 (it appears to be a typographical error)? Should you replace the word "gaseous"in Table 1.4-9 in the definition sections of items 9.3.1 add 9.3.2, and from the parameter sections of 9.5.1 and 9.5.2, with the words "airborne effluents" to more accurately represent the effluent release characteristics?

SSAR Section 2.1.1, Site Location and Description

RAI 2.1.1-1

SSAR Figure 1.2-3 shows the proposed ESP exclusion area boundary (EAB) and low population zone (LPZ), and the distances to the EAB and LPZ by sector. Please provide an expanded and legible figure to clearly show the proposed EAB and LPZ as well as existing Clinton Power Station EAB. Please provide the direction distances to the EABs and LPZ by sector. Please state the distance from the proposed ESP site to the nearest EAB line for the proposed ESP site, including its direction and distance.

SSAR Section 2.1.2, Exclusion Area Authority and Control

RAI 2.1.2-1

You stated in Section 2.1.2.1 that EGC will ensure that it has or will be granted the necessary authority, rights, and control of the EGC ESP Site, including the exclusion area, prior to commencing actions allowed pursuant to any ESP granted from your application.

Please provide the following information regarding your approach to obtaining such a grant:

a) A list of regulatory agencies and other private parties from which you would need a grant;
b) Information as to whether the ESP site incorporates the entire exclusion area boundary as shown in the SSAR; and
c) The duration of the grant that you would seek.

SSAR Section 2.1.3, Population Distribution

RAI 2.1.3-2

In the SSAR Section 2.1.3.5, you stated that the closest population center with the largest population is Decatur, Illinois, located approximately 22 miles south-southwest, which had a 2000 population of 81,860. On the other hand, the SSAR Table 2.1-3 shows the 2000 population of 70,942 of resident ant transient population in 10 to 25 miles south-southwest sector. Explain the discrepancy.

SSAR Section 3.3, Radiological Consequences of Accidents

RAI 3.3-1

In Section 3.3 of the SSAR, you stated:

> "The radioactivity released to the environs for DBAs is provided by the reactor supplier based upon their standard safety analysis reports or as specified in their PPE listing as being representative of the bounding DBA environmental release."

Please provide the PPE listing specified by the reactor suppliers.

SSAR Section 3.3.1, Selection of Postulated Accidents

RAI3.3.1-1

In Section 3.3.1 of the SSAR, you stated that you used the AP-1000 certified design in selecting design basis accidents (DBAs) for demonstrating site suitability. Westinghouse has revised its χ/Qs in the AP-1000 design certification control document since submittal of the Clinton ESP application. Please use the certified χ/Qs in the Westinghouse AP-1000 Design Control Document and revise the site-specific doses and fission product releases for all DBAs in SSAR Section 3.3 accordingly, or please note that the AP1000 values used in the ER have been revised but the applicant has elected not to use the updated values in the accident analyses.

RAI 3.3.1-2

In Section 3.3.1, you have selected the spectrum of limiting DBAs for evaluation in assessing the proposed ESP site suitability. Please state why you have not included PWR locked rotor accident in the spectrum of limiting DBAs.

SSAR Section 3.3.2, Evaluation of Radiological Consequences

RAI 3.3.2-1

Are the "0 to 2 hours" radioactivity release time intervals shown in Section 3.3.2 for any two-hour period with the greatest EAB doses? If so, please add a note to indicate this fact.

SSAR Section 3.3.4, Postulated Accidents

RAI 3.3.4-1

In Section 3.3.4, the time-dependent source term activities released to the environment during each DBA are based on the source terms used to support the standard reactor designs (e.g., AP1000

and ABWR). The ABWR source term is based on TID-14844 and AP-1000 source term is based on the alternative source term described in Regulatory Guide 1.183. You stated that the reactor accident source terms of the other reactors being considered for the proposed ESP site are expected to be bounded by the AP1000 and ABWR source terms. If one of the other reactor design is eventually selected for the proposed ESP site at COL, please confirm that you would either verify that the AP1000 and ABWR source terms are bounding or provide its own source term to demonstrate its compliance with the requirements of 10 CFR 52.17 and 10 CFR Part 100 at COL.

RAI 3.3-4-2

Several tables in Section 3.3 show time-dependent activities released to the environs as the PPE values. Please provide the references and the methodology used to determine the time-dependent activity release values in these tables. Also, please ensure the values in these tables appropriately reflect the certified AP1000 design χ/Qs as discussed in RAI 3.3.1-1 .

RAI 3.3.4-3

SSAR Table 3.3-2 summarizes the resulting doses at the ESP site for postulated design basis accidents using the AP-1000, the ABWR, and the ACR-700 as surrogate reactor designs. Please update the table for each design basis accident to include (1) AP-1000, ABWR, and ACR-700 χ/Q values and doses used for the EAB and LPZ, and (2) the ratios of site-specific χ/Qs to design certification χ/Qs used.

RAI 3.3.4-4

Several tables, including Table 3.3-2 in Section 3.3, present doses for ABWR design basis accidents in total effective dose equivalent (TEDE) units. Please provide the doses in thyroid and whole body doses in addition to the doses in TEDE units, because the General Electric ABWR design is certified with the thyroid and whole body doses.

SSAR Section 3.3.3, Source Terms

RAI 3.3.3-1

In Section 3.3.3, you stated that the ACR-700 source term definition is similar to the TID-14844 approach and the GT-MHR and PBMR use a mechanistic approach to arrive at their source terms. Please provide the source terms used for ACR-700, GT-MHR, and PBMR.

DRAFT

Exelon Early Site Permit Application
Emergency Plan
Requests for Additional Information (RAI)

RAI No. 13.3-13

Provide the following information regarding the State and/or local emergency plans:

a) a description of the legal basis (reference specific acts, codes or statutes) for county or municipal authorities to be part of the overall response organization for the Emergency Planning Zones

b) a description of the general capabilities of radiological laboratories (besides the two Illinois Department of Nuclear Safety mobile laboratories) to provide radiological monitoring and analyses services

c) a description of the provisions for communications between State and federal emergency response organizations

d) 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

e) references to maps in the local emergency plans that show evacuation routes

f) a description of the State and local governments' concept for using the traffic capacities of evacuation routes for implementing protective measures

g) a description of the State and local organizations' concepts for using evacuation time estimates when considering the evacuation of various sectors and distances

h) a description of the Illinois department of Nuclear Safety Standard Operating Procedures that relate to the bases for choosing a recommended protective action for the plume exposure pathway

i) a description of how the State will acquire and distribute dosimeters, both direct-reading and permanent record devices

j) a description of 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

k) a description of State and local organizations' means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment

l) the title of the individual(s) at the State level with the overall authority and responsibility for radiological emergency response planning

m) the title of the individual(s) at the State level who is designated as the Emergency Planning Coordinator with responsibility for the development and updating of emergency plans and coordinating of these plans with the other response organizations

RAI No. 13.3-14

Provide the results of the review of the draft Evacuation Time Estimate study by State and local organizations.

RAI No. 13.3-15

Discuss the differences in population data presented in the application and the population data in the Evacuation Time Estimate (ETE) study and the Phase One Report.

RAI No. 13.3-16

Provide a description of the method(s) used to confirm evacuation and the estimated time required for confirmation of evacuation.

RAI No. 13.3-17

Even though some extrapolated population data has been provided for the addition of two reactors at the Clinton site and refueling outages, additional extrapolated population data is needed for the next 20 years (life of the ESP application) and a discussion of its impact on the ETE.

RAI No. 13.3-18

Provide an estimate of the impact on the ETE for the special situation during outages at the Clinton Power Station when ESP Units 1 and 2 are under construction.

RAI No. 13.3-19

Provide a copy of the letter of agreement with the DeWitt County Sheriff's Department that is dated 2003 or more current.

RAI No. 13.3-20

Provide an updated version of Table B-1 "Requirements Matrix" in Appendix B "Requirements Matrix" of the EGC ESP Emergency Plan. For example, consider updating the following references:

NUREG-0654/ FEMA-REP-1, Rev.1, Supp. 2, Sec. V Eval. Criteria	EGC ESP Plan	State of Illinois Plan	DeWitt County Plan
C.1	Add section 3.1.1.1.2		
C.2		Remove 3A(3) Add 1E(1)	

NUREG-0654/ FEMA-REP-1, Rev.1, Supp. 2, Sec. V Eval. Criteria	EGC ESP Plan	State of Illinois Plan	DeWitt County Plan
C.3		Remove 1E(1) and 3A(8) Add 3A(12) and 3C	Add Appendices D and E Add Map C
E.2	Replace sections 5.3.and 5.4 with 5.2 and 5.3		
E.3		Remove 4A, 4B, 4C, and 4D Add 1G	Remove 1D Add 2A
F.1.a		Remove 1E(2), 4C, and 4D Add 1J	Remove 1C, 1D, 2A, 2B, 2C, and 2D Add 2G and Appendix A
F.1.b		Remove 1J and 4A Add 2B	Remove 2G and Annexes 2A – 2F Add IPRA Volume I
F.1.c		Remove 2B, 3A(3), and 3A(8) Add 3A	Add 1C and 1D
F.2			Add 2G and Annexes 2A – 2F
G.2		Remove 5C Add 5D	
I.1	Add 3.1.1.1.7	Remove 3A(4) Add 1E and 3A(8)	Add 1D, 2F, and 2O
I.3		Add 1E	
J.1		Remove 1E(4) Add “Not Applicable”	Remove “Included in the Illinois Plan at 1E(4)” Add “Clinton Power Station Emergency Plan”
J.2	Add 10.2		
J.4	Add 10.1.3 and Figure 10.2-1		
J.4.a		Remove 1E(4) Add “Site-specific volumes”	Remove 2J, Annexes 2A – 2F Add 1E and Maps B and D
J.4.b	Change figure number to 2.3-2	Remove 1E(4) Add “Site-specific volumes”	Add Maps A – C
J.4.c	Remove 6.1 Add 5.2.1	Add 1G	Remove 2G, 2I, and 2P Add 1C and 2A
J.4.d		Remove 1E(4) Add 5C	Remove Attachment references Add 2J, 3B, and Annexes 2A – 2F
J.4.e			Remove 2O(3) Add 1D, 2O, and Annexes 2A – 2F
J.4.f			Remove Appendix D and Map C
J.4.g		Remove 1E(4) Add “Site-specific volumes”	Remove Appendix D

NUREG-0654/ FEMA-REP-1, Rev.1, Supp. 2, Sec. V Eval. Criteria	EGC ESP Plan	State of Illinois Plan	DeWitt County Plan
J.4.h		Remove 1E(4) Add “Evacuation Time Estimates”	Remove 2J, Map A, and Map C Add “Evacuation Time Estimates”
J.4.i		Add 3A(2), 3A(6), and 3A(7)	Remove 1D(1) and Annex 2A Attachment 8 Add 1D and Annexes 2A – 2F
J.4.j		Remove 1E(4) Add 3A(6), 3A(7), and 3A(11)	Remove 1D(1), 1D(4), Annex 2A Attachment 1, Map A, and Appendix B Add 1D, Annexes 2A – 2F
J.4.k		Remove 1E(4) Add “Evacuation Time Estimates”	Remove “Included in Illinois Plan at 1E(4)” Add “Evacuation Time Estimates”
J.4.l			Remove 3 Add “See IPRA Volume I”
J.5		Remove 1E(4)	Remove Appendix D and Appendix E
K.1.a thru h	Add 11.1		
K.3.a			Remove 2O(1) Add 1D, 2O, and Annexes 2A – 2F
K.3.b		Remove 1E(4) and 3A(8)	Add 1D and Annexes 2A – 2F
K.4	Remove 11.2.2 Add 11.1		
K.5.b	Add 11.2.4		Add 2A and Annexes 2A – 2F
L.1	Add 3.4.5	Remove 1E Add 1H	Remove 1E
O.1	Add 15.5		
O.1.h		Add 1H	
P.1			Remove 2N Ass 2L
P.2		Remove 6D	
P.5	Remove 16.4		
P.5	Add Appendix B Remove 16.7		