

November 9, 2004

Mr. Adrian P. Heymer
Director, Special Projects
Nuclear Generation Division
Nuclear Energy Institute (NEI)
1776 I Street, NW, Suite 400
Washington, D.C. 20006-3708

SUBJECT: ISSUES RELATED TO EMERGENCY PLANNING FOR EARLY SITE
PERMITS

Dear Mr. Heymer:

The purpose of this letter is to respond to the emergency planning issues raised in the September 27, 2004, letter from the Nuclear Energy Institute (NEI) (ADAMS Accession No. ML042820378), associated with the Nuclear Regulatory Commission (NRC) review of early site permit (ESP) applications. The September 27 letter includes several proposed understandings and areas for additional discussion relating to how the "major features" option for emergency planning would be addressed in ESP application reviews. Your letter resulted from a September 9, 2004, public meeting between NEI and the NRC staff at which emergency planning issues were discussed.

The regulations in 10 CFR 52.17 provide various options for an early site permit (ESP) applicant with respect to the level of emergency planning information that is included in the application. As a minimum, applicants must identify physical characteristics unique to the site that could pose a significant impediment to development of emergency plans. The applicant must also describe contacts and arrangements made with governmental agencies that have emergency planning responsibilities. In addition to these minimum requirements, an applicant may provide additional emergency planning information by proposing major features of the emergency plans, which can be reviewed and approved by the NRC in consultation with the Federal Emergency Management Agency (FEMA). The applicant may also provide complete and integrated emergency plans that meet the criteria of 10 CFR 50.47.

This letter provides NRC staff positions on the various approaches an ESP applicant might take to emergency planning, and it also responds specifically to the proposed common understandings and areas for further discussion in NEI's September 27 letter. Please be aware, however, that in regard to the review of offsite emergency planning and preparedness proposed in an ESP application, FEMA is currently evaluating the NRC positions expressed in this letter. We will inform you if FEMA's review results in any changes to the positions expressed in this letter.

The staff will review the emergency planning information provided in support of an ESP application on a case-by-case basis.

Significant Impediments

In accordance with 10 CFR 52.17(b)(1), an ESP applicant must identify whether there are physical characteristics unique to the proposed site that could pose a significant impediment to development of emergency plans. While the applicant is not required to provide a preliminary analysis of evacuation time to support a finding of no significant impediments, it may choose to do so. Because the “no significant impediments” finding is a very high-level determination, it does not establish the acceptability of any emergency plan with finality at the combined license (COL) stage. It only provides a measure of confidence at the ESP stage that the physical characteristics of the site are amenable to the development of emergency plans.

Background on Major Features

The provisions of 10 CFR 52.17(b)(2)(i) allow the ESP applicant the option of proposing “major features” of emergency plans, such as the exact sizes of the emergency planning zones (EPZs). The approval of major features is addressed in 10 CFR 52.18, which states that the Commission shall determine, after consultation with FEMA, whether any major features of emergency plans submitted by the applicant under 10 CFR 52.17(b)(2)(i) are acceptable.

While the regulations do not further define “major features,” the staff provided perspective on the subject in SECY-91-041, “Early Site Permit Review Readiness” (see pages 6 and 10).

Emergency Preparedness Review

The next level of emergency planning includes proposing major features of the emergency plan, such as currently required in a preliminary safety analysis report [PSAR] for a construction permit in accordance with 50.34(a) and Appendix E, Section II. In consultation with the Federal Emergency Management Agency (FEMA), the NRC will determine whether major features of emergency plans submitted by the applicant under 52.17(b)(2)(i) are acceptable. As with the minimal submittal, the staff would document its finding in an SER, including referencing an evaluation provided by FEMA.

Review Guidance Adequacy

During the 1980s, applicants used NUREG-0654 . . . as a guide to the format and content for CP and OL applications. To aid in preparing and reviewing emergency plans submitted with an ESP application, the staff should write a supplement to NUREG-0654 to define the planning standards and associated evaluation criteria that apply to the three levels of emergency planning provided by 10 CFR Part 52. This supplement should convey the NRC’s expectations regarding the scope and depth of FEMA’s review.

In response to the Commission’s direction, the NRC and FEMA jointly developed draft Supplement 2 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 Emergency Planning in an Early Site Permit Application.” Supplement 2 defines “major features” as including “the exact sizes of the EPZs and other features as described in Section V of this document.”

Supplement 2 was issued in April 1996 as a draft report for comment. A limited number of comments were received from stakeholders in 1996, and Supplement 2 currently remains a draft report. (Although the staff intends to use the comments from 1996, in addition to lessons learned from the initial ESP application reviews, to revise Supplement 2, the comments from 1996 are not relevant to the issues discussed in this letter.) In May 2004, the NRC issued Review Standard (RS)-002, "Processing Applications for Early Site Permits," which identifies Supplement 2 as the primary guidance for the review of radiological emergency preparedness information and plans submitted with an ESP application.

As stated in SECY-91-041, the NRC considers "major features" to be similar in scope to the PSAR-related emergency planning requirements of Section II of Appendix E to 10 CFR Part 50, which states the following:

The Preliminary Safety Analysis Report shall contain sufficient information to ensure the compatibility of proposed emergency plans for both onsite areas and the EPZs, with facility design features, site layout, and site location with respect to such considerations as access routes, surrounding population distributions, land use, and local jurisdictional boundaries for the EPZs in the case of nuclear power reactors as well as the means by which the standards of §50.47(b) will be met.

However, while Appendix E establishes requirements for a PSAR, Supplement 2 provides specific guidance and criteria for development and review of an ESP application. For example, Section II.D of Appendix E requires a description of "[f]eatures of the facility to be provided for onsite emergency first aid and decontamination and for emergency transportation of onsite individuals to offsite treatment facilities." In comparison, several Supplement 2 major features address this subject. Major feature B (Onsite Emergency Organizations) asks for the identification of medical services to be provided onsite, including letters of agreement. Major feature K (Radiological Exposure Control) asks for a description of guidelines on dose limits for: removal of injured persons, performing personnel decontamination, providing ambulance service, and providing first aid and medical treatment services. In addition, it asks for a description of the means for radiological decontamination of emergency personnel wounds, supplies, instruments, and equipment. Major feature L (Medical and Public Health Support) asks for a description of contacts and arrangement for medical services for contaminated injured individuals. Finally, major feature O (Radiological Emergency Response Training) asks for a description of training for first aid and rescue personnel, as well as medical support personnel.

By expanding on the major features concept in the regulations, Supplement 2 serves to provide guidance and a basis for development and review of an ESP application, including NRC review and acceptance of the major features of an emergency plan. The guidance applies to either an existing reactor site or a new site, and, for those major features found acceptable under 10 CFR 52.18, its use would result in finality, as provided under 10 CFR 52.39.

Staff Position on Finality of Major Features

The staff will accept major features that satisfy the criteria in Supplement 2. An ESP applicant seeking acceptance of major features must clearly state which major features (as described in Supplement 2) for which it seeks acceptance. To the extent that the staff finds a major feature

acceptable, the specifics of that finding will be clearly described in the safety evaluation report and summarized in the ESP, should one be issued. The acceptance of a major feature will be final, subject to the provisions of 10 CFR 52.39. For any areas of emergency planning that are not specifically addressed in the safety evaluation report and the ESP, and as such, are not a part of the basis for the acceptability determination, 10 CFR 52.39 finality would not apply.

As stated in 10 CFR 52.79(d), a COL application must contain emergency plans which provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency at the site. The regulations in 10 CFR 50.47 and Appendix E to 10 CFR Part 50 provide the applicable requirements for demonstrating that a COL applicant has fully satisfied 10 CFR 52.79. The staff cannot make a finding at the ESP stage that would preclude evaluation of a COL applicant's compliance with these regulations, unless the ESP applicant has already shown full compliance with them.

There is a significant difference between findings associated with the acceptability of major features under 10 CFR 52.17(b)(2)(i), and reasonable assurance that adequate protective measures can and will be taken for complete and integrated emergency plans under 10 CFR 52.17(b)(2)(ii). Supplement 2 reflects the level of review appropriate for major features of emergency plans in an ESP application, and, in general, examines the description of emergency planning features, rather than actual implementation. The description of major features of the emergency plan in an ESP application would not contain the same level of detail as complete and integrated plans. Significant additional development by applicants and offsite agencies, and review by NRC and FEMA, may be necessary to determine that the major features established at the ESP stage have been fully developed to ensure implementation of complete and integrated plans at the COL stage. In other words, acceptance of a high-level description of a major feature (e.g., sirens for notification) would not preclude review of the details of that major feature (e.g., number and placement, power supply, etc.) at the COL stage if those details are needed to satisfy the applicable regulations.

To the extent an ESP applicant seeks complete finality at the ESP stage, the applicant must provide information sufficient to satisfy the requirements in 10 CFR 52.17(b)(2)(ii), 10 CFR 50.47, and Appendix E to Part 50. Absent such information, the staff's acceptability determination for a given major feature does not constitute a finding that the applicable requirements of 10 CFR 52.79(d), 10 CFR 50.47, and Appendix E to 10 CFR Part 50 have been met. While the major features approved in an ESP are final pursuant to 10 CFR 52.39, the complete and integrated plans submitted at the COL stage are subject to review. The review would include both an assessment of how the major features in the ESP, as well as those emergency planning areas not covered by the ESP, are incorporated to facilitate the implementation of the complete and integrated plans, consistent with applicable requirements.

Complete and Integrated Plans

In accordance with 10 CFR 52.17(b)(2)(ii), an ESP applicant may submit complete and integrated emergency plans. The staff will use the guidance in NUREG-0654 to determine the adequacy of such plans. If the staff finds that the plans satisfy the applicable requirements of 10 CFR 50.47, the ESP holder will receive a final determination, subject to the provisions of 10 CFR 52.39, that the plans provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Nonetheless, a COL applicant

would need to update the information in the plan at the COL stage, consistent with the staff's proposed rulemaking on 10 CFR Part 52 (68 FR 40025, July 3, 2003).

Staff responses to items in NEI's 9/27/04 letter

NEI Item A.1

The staff agrees in part with NEI's proposed understanding. For an ESP site that is proximate to an operating nuclear facility, in general, the ESP site would not be expected to have physical characteristics that could pose a significant impediment to the development of emergency plans for a new facility at that site. However, the existence of emergency plans for the existing reactor(s) would not, by itself, be sufficient to fully comply with 10 CFR 52.17(b)(1). The following partial excerpt from RS-002, section 4.5 ("Use of Existing Information From Nearby Facilities for ESP Applications"), provides relevant guidance applicable to use of an existing emergency preparedness program to demonstrate compliance with 10 CFR 52.17(b).

Emergency planning information for an existing, operating reactor site (i.e., from a prior licensing action) may be included in an ESP application; either directly, or through incorporation by reference. Such information will be reviewed to verify it (1) is applicable to the proposed site, (2) is up-to-date when the application is submitted, and (3) reflects use of the proposed site for possible construction of a new reactor (or reactors).

As discussed further in response to NEI's item B.2, none of these three considerations require a detailed review of an existing emergency plan. The staff believes that an ESP applicant can easily address these considerations by providing supplementary information (i.e., beyond that contained in the existing emergency plan program) that addresses the new facility that might be located at the site. Therefore, the existing emergency plan would not need to be revised to address the ESP.

NEI Item A.2

The staff agrees with NEI, and will identify which regulation any future evacuation time estimate (ETE) request for additional information (RAI) addresses [i.e., 10 CFR 52.17(b)(1), 10 CFR 52.17(b)(2)(i), or 10 CFR 52.17(b)(2)(ii)]. As previously stated, each ESP applicant should clearly state the regulation(s) under which it is seeking a finding, and the staff's RAIs will address information needs associated with that regulation.

NEI Item B.1

As noted in NEI Item A.2, a preliminary analysis of evacuation time is not required to support a finding of "no significant impediments" in accordance with 10 CFR 52.17(b)(1). The staff's review would focus on determining whether there are physical characteristics unique to the proposed site that could pose a significant impediment to development of emergency plans.

However, for an ESP application that asks for approval of a major features emergency plan under 10 CFR 52.17(b)(2)(i), time estimates for evacuation would be needed to allow for a review of plume exposure pathway EPZ evacuation characteristics. This would be necessary in order to make an acceptability determination under 10 CFR 52.18 of major feature J (Protective

Response) as defined in Supplement 2. An ETE is necessary for this purpose. The staff would review the ETE for a major features emergency plan to determine whether it supports protective response evaluation criteria J.3 and J.4.k in major feature J of Supplement 2. As called for in Supplement 2, this major features review would involve more than just physical characteristics, in that the staff would consider how ETE results would be used in choosing protective actions during an emergency.

The above position is consistent with NRC's May 30, 2003, letter to R. Simard, NEI, entitled "Resolution of Early Site Permit Topic 16 (ESP-16), Emergency Planning," Item 1, which stated that the staff intended to review any ETE analysis or other identification of physical impediments in an ESP application. (The intent to review ETEs is also addressed in RS-002 Attachment 2, Section 13.3.) In accordance with the guidance in RS-002 and Supplement 2, the staff intends to review an ETE to confirm it is consistent with applicable guidance and up-to-date at the ESP stage.

The staff's response to NEI Item B.2 addresses the review of a previously submitted ETE used to support an ESP application.

NEI Item B.2

The staff notes that RS-002, Section 4.5 states:

For site safety and emergency planning, previously filed information should be evaluated in the individual technical evaluation sections of the SER. Each reference to previously filed information should be clear and specific. The evaluation should document why the information is relevant for the specific use.

Additionally, RS-002 states:

The extent to which emergency planning information for an operating reactor site will be reviewed will be dependent upon the specific ESP application. In general, the existing elements of an established emergency preparedness program and emergency planning information that are relevant to, and provided (or incorporated by reference) in the ESP application will be considered acceptable and adequate; and a detailed review will not be necessary. For example, the adequacy of an existing offsite siren system would not be subject to a detailed review.

If the ESP applicant clearly incorporates into the application previously filed emergency preparedness information (which could include an ETE) for an operating reactor site in seeking a finding of "no significant impediments," the staff would not necessarily need to review that information in detail. The staff would, however, review the incorporated information as needed to determine whether the information submitted addresses the three considerations noted in the staff's response to NEI Item A.1. In addition, if the applicant is not the licensee of the existing facility, some review will likely be needed to ensure the applicability of the previously filed information.

For an ESP application that seeks acceptance of one or more major features, the same principle would apply. For example, Supplement 2, evaluation criterion 4.k for Major Feature J calls for a time estimate for evacuation of various sectors and distances based on a dynamic

analysis for the plume exposure emergency planning zone. If the ESP applicant incorporates or references a previously filed ETE for an adjacent operating plant, and the applicant has provided information to demonstrate that it has addressed the three considerations noted in A.1 above, the staff would likely conclude that the evaluation criterion has been satisfied. The staff would not necessarily need to review the details of the ETE for adequacy.

The staff would use RAIs to obtain, when necessary, clarification of the location of information contained in existing emergency plans, including an associated ETE, that addresses a given Supplement 2 evaluation criterion. If an applicant adopts an existing emergency plan, all aspects of the emergency plan related to the planning standards from Supplement 2 should be readily available. The applicant would only be asked to point out where the evaluation criterion in question is addressed in the existing plan or associated documents.

NEI Item B.3

See staff response to NEI Item B.2. Applicants and associated offsite agencies are not expected to expend resources to make changes to existing emergency plans, in response to RAIs for ESPs. They are only expected to provide the information that is available in the existing integrated onsite and offsite emergency plans. Nonetheless, any deficiency discovered in such plans will need to be corrected to maintain compliance of the existing plans, as well as to form the bases of findings made for the ESP.

NEI Item B.4

The staff disagrees with NEI's position that emergency planning major features should focus on applicant-controlled elements. As discussed in SECY-91-041 (see page 3), the purpose of the ESP process is to allow for early consideration of site suitability issues. Emergency preparedness is dependent on the existence of integrated onsite and offsite emergency plans. To achieve such integration, the involvement and participation of both onsite and offsite agencies is preferred in the planning process. However, Supplement 2 and the associated regulation in 10 CFR 50.47(c) allow for preparation and use of a utility plan, in the absence of offsite agency participation in the planning process.

The use of "interface requirements," as defined in NEI's letter, to facilitate NRC review of emergency planning major features is not addressed in either RS-002 or Supplement 2. The intended purpose of such a concept appears to be the elimination of the review of offsite major features emergency plans at the ESP stage. The staff does not agree with this approach, as it is contrary to 10 CFR 52.17(b)(2)(i) and 10 CFR 52.18, which specifically call for NRC review and approval of major features in consultation with FEMA. This consultation with FEMA, which relates to NRC's determination of the adequacy of offsite emergency plans, is consistent with existing regulatory authority, the NRC/FEMA memoranda of understanding, the guidance in RS-002 and Supplement 2, and associated Commission policy and direction.

NEI Item B.5

The staff agrees that a revision to Supplement 2, based on lessons learned from the current ESP reviews, is needed for clarification. However, the staff does not agree with NEI's proposed changes.

The staff uses the criteria in the existing guidance (i.e., RS-002 and Supplement 2 to NUREG-0654) to review an applicant's submittal, and to ensure consistency and comprehensiveness of its reviews. The staff does not agree with NEI's assertion in the September 9, 2004, meeting that "major features" can, or should, be a "continuum" of information at levels of detail varying from little more than identification of significant impediments, to submittal of complete and integrated emergency plans, or the similar assertion in NEI's September 27, 2004, letter. The Commission gave clear direction to the staff requirements memorandum (SRM) to SECY-91-041 which directed the staff to develop review guidance. This was to ensure that the appropriate process for the review of such guidance was followed, including review by management, the Committee to Review Generic Requirements, the Advisory Committee on Reactor Safeguards, and the public. Supplement 2 is the product of the joint effort of NRC and FEMA staff to establish appropriate standards and evaluation criteria that are applicable to major features of emergency plans, as allowed by 10 CFR 52.17(b)(2)(i).

NEI's proposed approach, if used, would allow for review of emergency planning information in an ESP application without any guidance regarding the scope and level of detail needed for the NRC, in consultation with FEMA, to make an acceptability determination pursuant to 10 CFR 52.18.

NEI suggests that NUREG-0654, by itself, could be used as NRC staff guidance. Use of this approach would create a fourth option for emergency planning submittals at the ESP stage, an option which is not currently addressed in the regulations. Therefore, the staff does not agree with this approach. Because NUREG-0654 is intended to address complete and integrated emergency plans and does not address ESPs or "major features," its use as the single guidance document for evaluating an ESP application would not provide specific regulatory guidance to the staff or applicants relating to how much information is enough to obtain an acceptability determination for a major feature under 10 CFR 52.18.

The staff, therefore, will continue to use Supplement 2 for the review of ESP applications that propose major features of the emergency plan. If an applicant does not provide sufficient information to satisfy the evaluation criteria in Supplement 2, the staff will not find the affected major feature(s) acceptable, pursuant to 10 CFR 52.18. If information is provided that goes beyond that called for in Supplement 2, the staff will state in the safety evaluation report that the information was not essential to its review, and therefore was not reviewed.

NEI Item B.6

The staff does not see any inconsistencies. The provisions of 10 CFR 52.17(b)(3) are limited to local, State, and Federal agencies with emergency planning responsibilities. Although the regulation requires descriptions of contacts and arrangements with local, State, and Federal governmental agencies, some major features may involve, for a particular site, the participation of nongovernmental agencies. An applicant seeking acceptance of such major features should describe contacts and arrangements with such nongovernmental agencies. For example, under major feature L (Medical and Public Health Support), evaluation criterion L.1 states that "[e]ach organization shall describe the contacts and arrangements made for local and backup hospital and medical services having the capability for evaluation of radiation exposure and uptake."

Regarding “the potential for [staff] review of approved EP information at COL stage to later standards,” 10 CFR 52.39(a)(1) provides criteria for such reviews. When Supplement 2 is revised, the staff intends to clarify language that could be interpreted otherwise, as discussed above in staff’s response to NEI Item B.5.

NEI Item B.7

The staff agrees with NEI that 10 CFR 52.79(d)(1) allows a COL application to incorporate by reference emergency plans approved in connection with the ESP. Further, the staff agrees with NEI that such information must be updated at the COL stage, consistent with the staff’s proposed rulemaking on 10 CFR Part 52 (68 FR 40025, July 3, 2003). The staff believes that complete and integrated emergency plans that have been approved in an ESP would have finality at the COL stage, subject to 10 CFR 52.39 and review of updated (changed) information.

Regarding the “no reduced effectiveness” provisions of 10 CFR 50.54(q), the staff disagrees with NEI. The use of the 10 CFR 50.54(q) “decrease in effectiveness” concept was previously addressed in NRC’s May 30, 2003, letter to NEI’s R. Simard, Item 7. The decrease in the effectiveness concept is that which applies to changes to existing emergency plans at licensed reactor sites, in accordance with 10 CFR 50.54(q) license conditions, and does not apply to updating emergency preparedness information associated with an early site permit. The staff agrees that existing emergency plans may be used to support an ESP application, as long as the applicant addresses any impacts that a new reactor at the proposed site might have on the emergency plan, and further provided that the existing plans meet the emergency planning requirements applicable to the ESP. Section 4.5 of RS-002 provides additional information on the use of existing information in support of ESP applications. See the staff’s response to NEI Item A.1.

The staff’s position on finality of major features determinations is provided earlier in this letter.

NEI Item B.8

The staff believes that, at the COL stage, the considerations regarding reference to an existing emergency plan would be similar to those at the ESP stage. For both cases, the staff will use RAs to obtain, when necessary, clarification of the information contained in the referenced emergency plans, as it applies to the prospective new reactor(s).

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Should you have questions regarding this letter, please contact Ms. Nan Gilles at (301) 415-1180 or Mr. Mike Scott at (301) 415-1421.

Sincerely,

/RA/

William Beckner, Program Director
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
Office of Nuclear Reactor Regulation

Project No. 689

cc: See next page

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Sincerely,

/RA/

William Beckner, Program Director
New, Research and Test Reactors Program
Division of Regulatory Improvement Programs
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cc: See next page

ADAMS ACCESSION NO. ML042870262 *See previous concurrence

OFFICE	PM:RNRP	PM:RNRP*	PM:RNRP*	SC:RNRP*
NAME	MScott	RAnand	NGilles	LDudes
DATE	11/1/04	10/21/04	10/21/04	10/22/04
OFFICE	SC:NSIR/EPD	OGC	BC:NSIR/EPD	PD:RNRP
NAME	EWeiss	RWeisman	NMamish	WBeckner
DATE	11/2/09	11/9/04	11/2/04	11/9/04

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Distribution for Letter to Adrian Heymer dated November 9, 2004

HARD COPY

RNRP RF

L. Dudes

W. Beckner

E-MAIL:

PUBLIC

J. Dyer

R. Borchardt

A. Fernandez

D. Barss

D. Matthews

F. Gillespie

R. Moody

R. Weisman

A. Hodgdon

M. Scott

L. Dudes

N. Gilles

R. Anand

J. Anderson

B. Musico

E. Weiss

N. Mamish

K. Winsberg

ESP-Generic

cc:

Mr. David Lochbaum
Union of Concerned Scientists
1707 H Street, NW
Suite 600
Washington, DC 20006-3919

Mr. Paul Gunter, Director
Reactor Watchdog Project
Nuclear Information & Resource Service
1424 16th Street, NW, Suite 404
Washington, DC 20036

Mr. Adrian Heymer
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

Mr. Russell Bell
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

Mr. Thomas P. Miller
U.S. Department of Energy
Headquarters - Germantown
19901 Germantown Road
Germantown, MD 20874-1290

Mr. James Riccio
Greenpeace
702 H Street, NW, Suite 300
Washington, DC 20001

Mr. Rod Krich
Vice President, Licensing Projects
Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

Ms. Patricia Campbell
Winston & Strawn
1400 L Street, NW
Washington, DC 20005

Mr. Ernie H. Kennedy
Vice President New Plants
Nuclear Plant Projects
Westinghouse Electric Company
2000 Day Hill Road
Windsor, CT 06095-0500

Dr. Regis A. Matzie
Senior Vice President and
Chief Technology Officer
Westinghouse Electric Company
2000 Day Hill Road
Windsor, CT 06095-0500

Mr. Gary Wright, Director
Division of Nuclear Facility Safety
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, IL 62704

Mr. Glenn Archinoff
Licensing Manager
AECL Technologies Inc.
481 North Frederick Avenue
Suite 405
Gaithersburg, MD 20877

Mr. Brendan Hoffman
Research Associate on Nuclear Energy
Public Citizens Critical Mass Energy
and Environmental Program
215 Pennsylvania Avenue, SE
Washington, DC 20003

Mr. Tom Clements
6703 Guide Avenue
Takoma Park, MD 20912

Mr. Paul Leventhal
Nuclear Control Institute
1000 Connecticut Avenue, NW
Suite 410
Washington, DC 20036

Mr. Jack W. Roe
SCIENTECH, INC.
910 Clopper Road
Gaithersburg, MD 20878

Ms. Marilyn Kray
Vice President, Special Projects
Exelon Generation
200 Exelon Way, KSA3-E
Kennett Square, PA 19348

Mr. Joseph D. Hegner
Lead Engineer - Licensing
Dominion Generation
Early Site Permitting Project
5000 Dominion Boulevard
Glen Allen, VA 23060

Mr. George Alan Zinke
Project Manager
Nuclear Business Development
Entergy Nuclear
M-ECH-683
1340 Echelon Parkway
Jackson, MS 39213

Mr. Charles Brinkman
Westinghouse Electric Co.
Washington Operations
12300 Twinbrook Pkwy., Suite 330
Rockville, MD 20852

Mr. Marvin Fertel
Senior Vice President
and Chief Nuclear Officer
Nuclear Energy Institute
Suite 400
1776 I Street, NW
Washington, DC 20006-3708

Dr. Glenn R. George
PA Consulting Group
130 Potter Street
Haddonfield, NJ 08033

Mr. Arthur R. Woods
Enercon Services, Inc.
500 TownPark Lane
Kennesaw, GA 30144

Mr. Thomas Mundy
Director, Project Development
Exelon Generation
200 Exelon Way, KSA3-E
Kennett Square, PA 19348

Mr. Ed Wallace, General Manager
Projects
PBMR Pty LTD
PO Box 9396
Centurion 0046
Republic of South Africa

Ms. Vanessa E. Quinn, Chief
Radiological Emergency Preparedness
Section
Department of Homeland Security/FEMA
500 C Street, SW
Washington, DC 20472

Mr. Ron Simard
6170 Masters Club Drive
Suwanee, GA 30024

External E-Mail
eddie.grant@exeloncorp.com
jim.mallay@framatome-anp.com