AGENDA
SEPTEMBER 25, 2002, MEETING
WITH NUCLEAR ENERGY INSTITUTE (NEI)
T-10-A1 9:00AM -4:00 PM

9:00 a.m.	Introductory Comments	NRC / NEI
9:10 a.m.	Follow-up Items from August 22 Meeting . ESP-1: ESP Application Template	 NRC
9:30 a.m.	Topics for Next Meeting . ESP-13: Seismic Demonstration Project	NRC/NEI/Applicants
9:40 a.m.	ESP-8: Use of a bounding approach for providing fuel cycle and transportation information required by NEPA (Tables S-3 & S-4) ESP-10: Use for ESP of relevant findings from 10 CFR 51, Subpart B, Appendix B (License Renewal GEIS) ESP-20: Use of existing site/facility information . Regulatory Framework . Industry Methodology / Approach . NRC Review Process . Specific Issues	NRC/NEI/Applicants
11:10 a.m.	Public Comment	
11:20 a.m.	Summary	NRC/NEI/Applicants
11:30 a.m.	Lunch Break	
12:30 p.m.	Follow-up Items from August 22 Meeting . ESP-6:Use of A Bounding Plant Parameter Envelope . ESP-7: 10 CFR 52.17 Requirements	NEI/Applicants **Correction** **Correction**
2:20 p.m.	Public Comment	
2:30 p.m.	Break	
2:40 p.m.	Discussion (Continuation from Above Topics)	NRC/NEI/Applicants
3:40 p.m.	Public Comment	
3:50 p.m.	Summary	
4:00 p.m.	Adjourn	

The industry has the following questions for the NRC concerning ESP-1 "Application Template."

1. Security -- 10CFR100.21(f) requires applications for site approval for commercial power reactors to demonstrate that the proposed site meets the following criteria: "Site characteristics must be such that adequate security plans and measures can be developed"

   - What information does the staff need for its review?
   - What acceptance criteria does the staff intend to use for its review (e.g. Regulatory Guide 4.7 Rev. 2 or new guidance under development)?
   - Does the NRC expect applicants to provide a level of detail regarding security application as part of the ESP application that would warrant classifying the information as "safeguards" information, or would more general information not warranting the "safeguards" classification be acceptable at the ESP stage?
   - The industry is currently planning to include the necessary information in a section in Part 4 "Programs and Plans" of the ESP application. Does the staff have any preferences on the location or formatting of the information which would make its review more efficient?

2. Radiological Consequence Evaluation – 10CFR52.17(a)(1) requires the site safety assessment to contain an evaluation and analysis of major SSCs that bear significantly on the site acceptability under the radiological consequence evaluation factors of 50.34(a)(1) [25 rem TEDE 2-hour exclusion area boundary individual dose, and 25 rem TEDE LPZ boundary individual dose for entire period of postulated cloud passage]. 10CFR100.21(c) identifies the same radiological consequence criteria.

   - Currently the NRC review of ESP information most closely associated with the above requirements appears to be located in SRP (NUREG 0800) section 2.3.4 (Short Term Diffusion Estimates); the industry is planning on locating the applicable evaluation and analysis in the corresponding section 2.3.4 in the ESP application. Does the staff have any preferences on the location or formatting of the information which would make its review more efficient?
   - SRP 2.3.4 (draft Rev. 2 April 1996) refers to a new SRP section 2.3.6 for review of Design Certification Site Parameter Envelope. Is this document publicly available?
   - SRP 2.3.4 (draft Rev. 2 April 1996) does not incorporate the changes to Part 100 made in December 1996. Does the NRC intend to include this in their Review Standard development?
   - Currently the NRC review of ESP information most closely associated with routine radiological releases (i.e. non-environmental report review) appears to be located in SRP (NUREG 0800) section 2.3.5 (Long Term Diffusion Estimates); the industry is planning on locating the applicable evaluation and

analysis in the corresponding section 2.3.5 in the ESP application. Does the staff have any preferences on the location or formatting of the information which would make its review more efficient?

3. Redress Plans – The NRC has previously suggested that the ESP applicants use the Clinch River Breeder Reactor Project as an example/model for Redress Plans. Does the NRC plan to issue more detailed guidance?

NRC Rulemaking Process Improvements

- Inter-Office Working Group looking at improving NRC Rulemaking Process
- Objective is increased efficiency and effectiveness
- Near-term process improvements will be applied to S-3/S-4 rulemaking

Key Changes to Rulemaking Process

- "Rulemaking" will begin once a technical basis is developed
  - Technical issues/problems will be resolved early in the process
  - Ensures Rulemaking phase is quicker/more efficient
- Technical Basis phase may involve public/stakeholder input

Actions Taken on Tables S-3 & S-4 Rulemaking

- S-3/S-4 Rulemaking prioritized higher due to New Reactor Licensing implications
- Funding Allocated for Contractor Assistance on Technical Basis Development
- Working Group and Steering Committee formed
- Issues related to S-3/S-4 updates identified/discussed

Actions Taken on Tables S-3 & S-4 Rulemaking

- Several National Labs visited to identify areas of expertise
- Currently in process of establishing contracts for Technical Basis work
- Plan is to complete the Technical Basis work prior to development of Rulemaking Plan
- Public/Stakeholder meetings planned during Technical Basis development

NEI-NRC Early Site Permit Meeting

September 25, 2002
ESP Task Force

ESP-8

Uranium Fuel Cycle and Transportation System Impacts

10 CFR 51.51 Table S-3

10 CFR 51.52 Table S-4

September 25, 2002

Agenda

- Background
- Approach
- Schedule

Background

- 10 CFR 52.17(a)(2) requires that a complete Environmental Report (ER) per 10 CFR 51.45 and 51.50 be included in an ESP Application
- 10 CFR 51.50 requires the ER to contain the information specified in 10 CFR 51.45, 51.51, and 51.52
- 10 CFR 51.51 and Table S-3 address the environmental effects of the uranium fuel cycle. 10 CFR 51.52 and Table S-4 address the environmental effects of the transportation of fuel and waste.

Background

- Characteristics for the range of reactor technologies that are consistent include:
  - Protection of human health and the environment is paramount
  - Use of NRC and DOT licensed transportation casks
  - Acceptable risk levels
  - Modes of fuel and waste transportation
- Characteristics for the range of reactor technologies that affect the comparison include:
  - Reprocessing
  - Burnup and enrichment
  - Fuel types
  - Cooling time prior to shipment
  - Demographics
  - Current accident statistics
  - Waste disposal

Approach

Task 1: Review Regulatory Requirements and Bases

- The transportation and fuel cycle impacts are expected to remain bounding for a range of reactor technologies
- Understand the critical assumptions, parameter values, and bases used to develop the current values
- Table S-3 Reference Documents
  - WASH-1248
  - NUREG-0116 (Supplement 1 to WASH-1248)
  - NUREG-0216 (Supplement 2 to WASH-1248)
  - RM-50-3 Rulemaking
  - NUREG-1555 Sections 5.7, 10.4.2
    - NUREG-1437
    - Other References

Approach

Table S-4 Reference Documents

- WASH-1238
- NUREG-75/038 (Supplement 1 to WASH-1238)
- NUREG-1555 Sections 3.8, 5.4 2, 7 4
  - NUREG-1437
  - NUREG-1437, Volume 1, Addendum 1
  - NUREG-0058
  - Other References

- Other Relevant Documents
  - NUREG-1714, documents use of "bounding approach"
  - NUREG/CR-6672, illustrates re-examination of transportation risk assessments and potential trade-offs
  - NUREG-0586, potentially useful in assessing transportation risk

Approach

Task 2: Assess Assumptions and Parameter Values

- Update/assess environmental baseline

- Define parameter values to represent transportation and fuel cycle impacts for a range of reactor technologies

Approach

Task 3: Assess Environmental Impacts

- Assess environmental impacts for a range of reactor technologies
- For those impacts bounded by the existing Tables S-3 and S-4, document the results
- For those impacts that are not bounded, characterize those impacts
  - Results must show that there are no significant environmental impacts

Approach

Task 4: Prepare ESP Application Sections

- Prepare evaluations of Tables S-3 and S-4, including supporting documentation
- Prepare impact assessments for Sections 5.4, 7.4, and 10.4 of the ESP Application Environmental Reports
- Appropriate quality controls will be in place to support the evaluations

Schedule

Mid Dec. 2002:	Interim status meeting with NRC proposed to review preliminary evaluation and results
End Jan. 2003:	Complete draft evaluation
End March 2003:	Complete final evaluation

ESP-20

Practical Use of Existing Site and/or Facility Information

Presentation to the NRC
September 25, 2002

1

Agenda

- What is Existing Information?
- Its Use in ESP Applications
- Implications for NRC Reviews
- Examples

2

What is Existing Information?

Existing information about the site and/or facility may be information either previously docketed for the other facility on the site, or otherwise reviewed by the NRC and determined by the applicant to be relevant

- Updated Final Safety Analysis Reports
- Technical Specifications
- Environmental Reports/EIS
- Safety Evaluation Reports
- Correspondence
- Emergency Plans
- NRC documents and publications

3

ESP Applications

- Applicants will use existing information in the ESP application
- The information may be presented in one or more ways:
  - in the ESP application itself,
  - "incorporated by reference," or
  - for environmental issues, "adopted" from previously approved information

4

Implications for NRC Reviews

- It's recognized that the NRC review of an ESP application is a new review
- The applicants' use and identification of existing information allows NRC to minimize the resources it spends examining previously reviewed/approved information
- Identifying existing information is expected to result in more efficient reviews by allowing the staff to focus on
  - Changes since the existing information was reviewed
  - New information

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Examples

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Example #1

Docketed Environmental Information

An applicant's 1982 Environmental Report for the existing facility contains information on the historic structures, bridges, and archeological artifacts that were identified

This information is being updated through performance of an archeological and cultural resources investigation to identify any additional historic structures or artifacts found since 1982

Both the 1982 ER information and the new information would be used in the applicant's Environmental Report. The information would be formatted to allow the reviewer to readily discriminate between existing and new information

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Example #2

Docketed Site Safety Information

An applicant's UFSAR contains information that describes the meteorological measurements program. It describes how the program meets NRC requirements including 10 CFR 50.47, NUREG-0696, NUREG-0737, and NUREG-0654. It also states that the program complies with RG 1.23.

The description of the onsite meteorological measurements program used to collect meteorological data would be "cut and pasted" into the applicant's ESP Site Safety Analysis Report, Section 2.3.3, Onsite Meteorological Measurements Program.

The information would be formatted to allow the NRC reviewer to readily identify the source of the existing information.

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ESP-10

Using Applicable Information from the License Renewal Generic Environmental Impact Statement

September 25, 2002

Agenda

- Background
- Overall Approach for ESP
- Examples

Background

- The NRC evaluated the environmental impacts of renewing nuclear power plant operating licenses for a 20-year period in its Generic Environmental Impact Statement for License Renewal of Nuclear Plants (GEIS), NUREG-1437.
- Results were codified in 10 CFR Part 51.
- The GEIS identified 92 environmental issues and reaches the generic conclusion of SMALL environmental impact for 69 of these issues.
- A site-specific review was required for the remaining issues which determined that the environmental impacts could be SMALL, MODERATE, or LARGE.

Overall Approach for ESP -

The logic of the GEIS applies, in that:

- Substantial information was collected and evaluated to address environmental issues for the licensing action.
- The overall approach for ESP application purposes is to utilize that information where possible <u>in support of</u> the NUREG-1555 required evaluations of environmental issues. (The GEIS evaluation is not a substitute for evaluating the issue for ESP environmental purposes.)
- The applicability/utility of the GEIS information for ESP is illustrated by three examples, categorized by the level of additional effort required to perform corresponding evaluations for ESP:
  - Essentially **no additional effort** to utilize for ESP purposes
  - **Some additional effort** to utilize for ESP purposes
  - **Substantial additional effort** to utilize for ESP purposes

Examples

Example #1 - No Additional Effort

10 CFR 51 Table B-1 Issue	GEIS Category	Primary GEIS Location
Discharge of sanitary wastes and minor chemical spills	1	4.2.1.2 Water Quality/Hydrology

GEIS Finding: SMALL. Effects are readily controlled through NPDES permit and periodic modifications, if needed, and are not expected to be a problem during the license renewal term.

Applicability Assessment: The information used to reach the finding is relevant and sufficient to evaluate this issue for the ESP environmental report.

Example #1 - No Additional Effort

Description of GEIS Information: Sewage wastes and cleaning solvents, including phosphate cleaning solutions, were evaluated by NRC staff as sanitary wastes. They are treated before release to the environment so that, after release, their environmental impacts are minimized. In cases where nonradioactive sanitary or other wastes cannot be processed by on-site water treatment systems, the wastes are collected by independent contractors and trucked to off-site treatment facilities. The staff found that discharges of sanitary wastes are regulated by NPDES permit, and that discharges that do not violate the permit limits are of small significance.

Example #2 - Some Additional Effort

10 CFR 51 Table B-1 Issue	GEIS Category	Primary GEIS Location
Groundwater use conflicts (potable and service water)	1 if < 100 gpm	4 8 1 Groundwater Use

GEIS Finding: SMALL. Plants using less than 100 gpm are not expected to cause any groundwater use conflicts.

Applicability Assessment: The information used to reach the GEIS finding is relevant but is not sufficient to evaluate this issue for the ESP environmental report. Some additional effort would involve collecting groundwater use data associated with the range of reactor technologies.

Example #2 - Some Additional Effort

Description of GEIS Information: NRC staff found that groundwater use of less than 0.0063 m3/s (100 gal/min) is of small significance because the cone of depression will not extend beyond the site boundary and should not impact the water table for neighboring withdrawals.

Example #3 - Substantial Additional Effort

10 CFR 51 Table B-1 Issue	GEIS Category	Primary GEIS Location
Heat Shock (for plants with once-through and cooling pond heat dissipation systems)	2	4.4 3 Aquatic Ecology

GEIS Finding: SMALL, MODERATE, OR LARGE. Because of continuing concerns about heat shock and the possible need to modify thermal discharges in response to changing environmental conditions, the impacts may be of moderate or large significance at some plants. See §51.53(c)(3)(ii)(B).

Applicability Assessment: The information used to reach the GEIS finding is relevant but not sufficient to evaluate the issue for the ESP environmental report. Substantial additional effort will be required to perform the required evaluations

Example #3 - Substantial Additional Effort

The applicant may need to perform thermal plume evaluations and establish impacts on aquatic ecology. The results would be subject to approval by the governing regulatory body.

Description of GEIS Information:

Operational experience indicates that most aquatic resource concerns have been found to be of small significance at all sites, and no mitigation measures beyond those implemented during the current term license would be warranted. However, thermal discharge effects are of sufficient concern on large cooling ponds that support valued aquatic resources that they continue to be examined in detail as part of CWA Section 316(a).

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Conclusions

- The evaluation logic applied to environmental issues in the GEIS for license renewal applies to evaluation of environmental issues for ESP.
- NRC concurrence requested
- Possible further discussion on how to present GEIS-based information in ESP applications

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Use of PPE for Radiological Consequence Assessment of Postulated Design Basis Accidents

Nuclear Energy Institute
Early Site Permit Task Force
Presentation to the
U. S. Nuclear Regulatory Commission

1

NEI

Background

- Radiological consequence evaluation factors identified in 10CFR 50.34(a)(1)
  - 25 rem TEDE individual dose at EAB for any 2-hour period following fission product release
  - 25 rem TEDE maximum individual dose at outer boundary of LPZ during entire period of release

2

Accident Dose Analysis

- Critical site characteristic affecting site suitability is the atmospheric dispersion coefficient
  - Defined based on site specific meteorological data
  - Defined for proposed facility EAB and LPZ

3

Accident Dose Analysis (Cont)

- Reactor vendors calculate accident consequences based on assumed atmospheric dispersion coefficients
  - Demonstrate that 10CFR 50.34(a)(1) requirements are met
  - Use design data to calculate consequences

4

Proposed Approach

- Calculate atmospheric dispersion coefficients using site meteorological data and proposed EAB and LPZ
- Perform sample calculation of doses using a challenging reactor design to demonstrate that the site can be expected to meet regulatory requirements for radiological consequences

5

Proposed Approach (Cont)

- Sample Calculation
  - Use ABWR isotopic release data and site specific atmospheric dispersion coefficients
  - ABWR uses TID source term
  - ABWR has the largest power level of any design under consideration
  - ABWR is a certified design providing confidence in design characteristics
  - Limiting accident features high early releases
  - Consider several accidents with varying probabilities and consequences

6

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Conclusions

- ESP will establish critical site characteristic, i.e., atmospheric dispersion coefficients
- Sample calculation will show that doses at EAB and LPZ can be expected to meet regulatory requirements
- At COL, applicant must show that the requirements of 10 CFR 50.34(a)(1) can be met by selected plant design at the ESP site

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EXAMPLE: Radiological Consequences - Normal Operation

- This example involves an assessment using a combination of bounding design parameters (PPE) and site characteristics to demonstrate compliance with 10CFR20 limits, i.e.,

  - the total effective dose equivalent (TEDE) to the individual likely to receive the highest dose does not exceed the annual dose limit of 0.1 Rem in a year,

    or

  - demonstrating that (i) the annual average concentrations of radioactive material released in gaseous and liquid effluents at the boundary of the restricted area do not exceed the values specified in Table 2 of Appendix B to Part 20; and (ii) if an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 0.002 rem in an hour and 0.05 rem in a year.

Evaluation Process

- **Bounding design parameters (PPE)**
  - Radioactive gaseous and liquid releases
  - Liquid dilution flow, e.g., cooling tower blowdown, etc.

- **Site characteristics**
  - Atmospheric dispersion, Average annual X/Q
  - Dilution in receiving body of water
  - Dose Pathways, e.g., drinking water, vegetables, milk, meat, etc.

Evaluation Process (Cont.)

- Perform analysis using the bounding design parameters and site characteristics to demonstrate site's capability to comply with 10CFR20 regulatory criteria.
- Bounding Design Parameters (PPE): Source Terms
  - Maximum Composite Isotopic Releases based on the bounding values from a review of the AP-1000, ABWR, ACR-700, PBMR, GT-MHR, and IRIS values.

Liquid

Isotope	Curies/yr	Reactor Type
I-131	0.014	AP-1000
Mn-56	0.0038	ABWR
Nb-95	0.0097	ACR-700

Gases

Isotope	Curies/yr	Reactor Type
Xe-133	9200	AP-1000
Kr-89	241	ABWR
Ar-41	400	PBMR

Evaluation Process (Cont.)

- Liquid Dilution Flow – Minimum Mechanical Draft Cooling Tower Blowdown Flow Rate (gpm)

  - ABWR 5850
  - AP-1000 10400
  - ACR-700 6400
  - PBMR 3915
  - GT-MHR 2400
  - IRIS 5250

  - Bounding 2400 gpm

Evaluation Process (Cont.)

Site Characteristics:

- Based on an assessment of measured site data, the site characteristic χ/Q value is determined to be **2.04E-06 sec/m^3** at the location of the maximum exposed individual.

- Dilution in Receiving Water Body (Lake, River, etc.)
  - Site Specific Factor Based on Water Body: ≥ 1, 10, 100, etc.
  - For this Example no credit for dilution in the receiving water body is conservatively assumed for the liquid radioactive releases, i.e., DF = 1.

- Site Specific Dose Pathways to the Maximum Exposed Individual:
  - Drinking Water = None
  - Fraction of year leafy vegetables = 0.33
  - Fraction of year cows pasture = 0.58
  - Fraction of year goats pasture = 0.67
  - Fraction of year beef cattle pasture = 0.58

Evaluation Results

Liquid Radioactive Releases:

- The calculated TEDE to the maximum exposed individual due to the release of bounding radioactive liquid effluents is 0.001 rem.

Gaseous Radioactive Releases:

- The calculated TEDE to the maximum exposed individual due to the release of bounding radioactive gaseous effluents is 0.012 rem.

Results

- Total TEDE << 0.1 rem therefore compliance with 10CFR20 criteria is readily achievable based on conservative source terms (PPE) and site specific dispersion, dilution, and pathways .

Conclusion

- Permit Basis
  - Bounding design parameters
    - Source term
    - Liquid dilution flow
  - Site characteristics
    - Average Annual χ/Q
    - Dilution Factor in the Receiving Water Body
    - Dose Pathway Factors
- This combination of bounding design parameters and site characteristics demonstrates the site's capability to comply with 10 CFR Part 20
- At COL, the applicant must demonstrate that the actual design characteristics of the proposed reactor type are enveloped by the PPE and site characteristic values used in the ESP application.

Overview and Practical Application of the Plant Parameters Envelope (PPE) Approach for Early Site Permit Applications

Presentation to NRC Staff
September 25, 2002

NEI

Presentation Outline

- Introduction and background
- Plant parameters envelope approach
- Origin and development of PPEs
- PPE worksheet
- Examples

NEI

What is a PPE?

- "Plant parameters envelope"
  - The set of postulated design parameters that bound the characteristics of a reactor or reactors that might later be deployed at a site
  - Used to obtain an Early Site Permit when the type of plant to be built has not been determined

Two ESP Scenarios

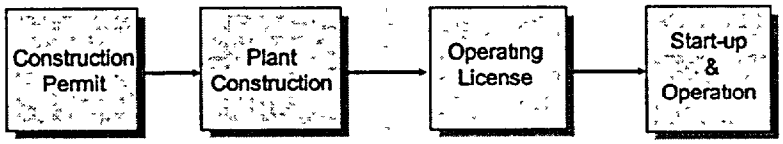
- ESP application specifies design characteristics for the specific facility to be built
- ESP application specifies postulated design parameters as a surrogate for actual facility information

Background

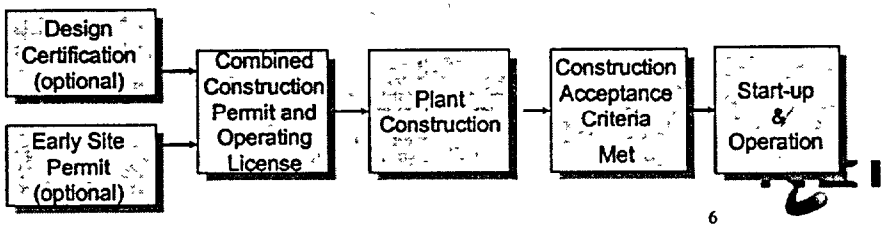
- Licensing Past
  - Plants and sites were evaluated together for Part 50 construction permits and operating licenses
- Licensing Future
  - Part 52 provides for separate NRC approvals for standard plant designs and sites, well in advance of any decision to build an actual plant
  - Combined license applications under Part 52 may reference an existing design certification and/or early site permit, or neither

Old Licensing Process vs. New

Part 50



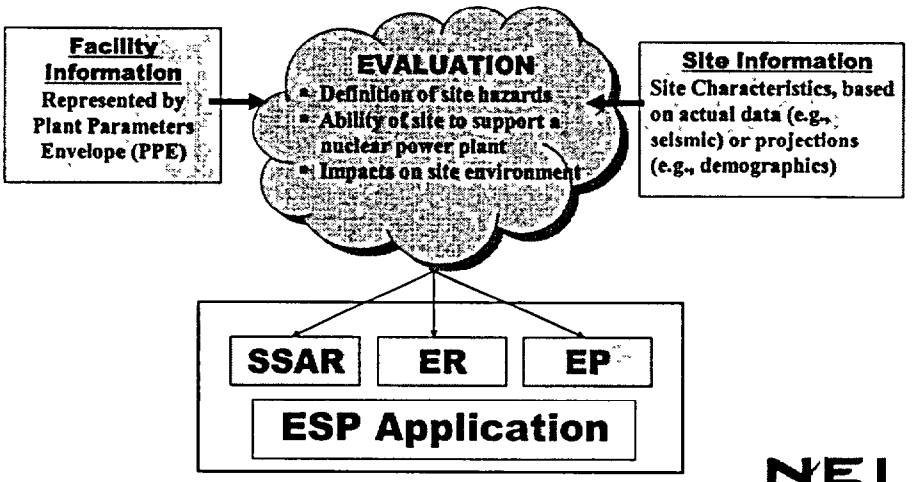
Part 52



Necessary Assumptions

- Early design and site approvals under Part 52 require making certain assumptions
  - Design certifications assumed a suite of "site parameters" to enable design development and safety reviews, e.g.,
    - Seismic accelerations
    - Maximum precipitation, flood level, wind speed
    - Soil properties, etc.
  - For early site permits that do not specify facility type, an array of "design parameters" must be assumed to facilitate site suitability evaluations, e.g.,
    - Cooling water requirements
    - Acreage/footprint
    - Effluents and releases

The PPE Approach



PPE Values

- Design parameter values are chosen to bound a range of possible future facilities that might one day be built, including
  - NRC certified designs
  - Designs in progress
  - Future designs

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Dual Advantages of PPE Approach

- Provides essential flexibility to future COL applicants to select the best technology at the time a decision to build is made
  - ESPs are valid for up to 20 years and are renewable
- Provides NRC with the technical basis for its review and issuance of ESPs

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ESP/Part 52 Terminology

Term	Definition
Site parameters	The postulated physical, environmental and demographic features of an as-yet unidentified site
Design parameters	The postulated features of the reactor or reactors that could be built
Site characteristics	The real physical, environmental and demographic features of the proposed facility location
Design characteristics	The real features of a reactor or reactors

ESP Applications

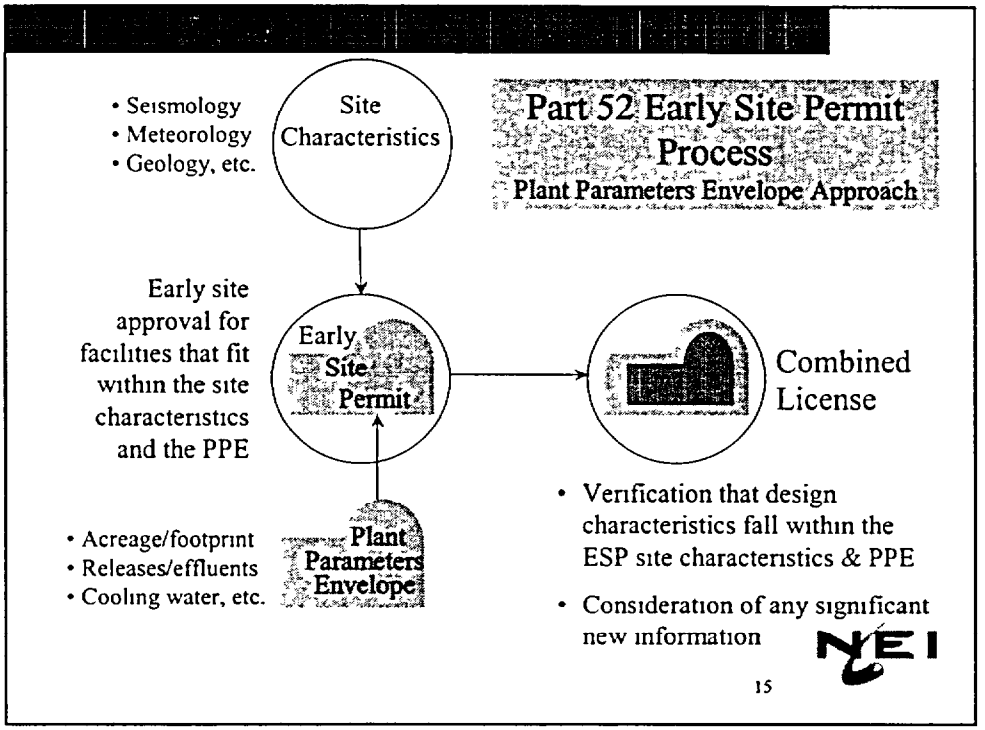
- ESP applications will include two main types of info:
  - Site characteristics: The real physical, environmental and demographic features of the proposed facility location.
    - Established through data collection and/or analysis
    - Developed in accordance with NRC requirements and guidance
  - Design parameters: The postulated features of the reactor or reactors that could be built
    - Design information that is necessary to prepare and review an ESP application.
- ESP applications, including the site characteristics and the PPE, must provide sufficient information to support required safety and environmental reviews by NRC

Envisioned Focus of NRC Reviews

- "Site characteristics" will be reviewed to ensure they completely and accurately describe the site
- Bounding "design parameters" (PPE values) will be used to determine that associated safety and environmental impacts are acceptable for the site

Key Expected NRC Findings for ESP

- **Site characteristics are complete and accurate**
- **Design parameters are sufficient** for purposes of required site safety and environmental reviews
- **The site is acceptable** for construction and operation of reactor(s) having characteristics that fall within the identified site characteristics and design parameters



Origin of PPE

- Need for the PPE approach was recognized in the early 1990s
- Developed by the joint industry/DOE Early Site Permit Demonstration Project (ESPDP)
- Current pilot ESP applicants are picking up where the ESPDP left off

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Systematic Development of PPEs

- Appropriate plant parameters were developed through a systematic review of
  - Regulatory criteria
  - Application content criteria
  - Consideration of previous site studies
  - Design and construction experience

Systematic Development (cont.)

- Design certification-related information was screened out. The remaining information related more to siting, and formed an initial group of design parameters
- Quantitative values were assigned to the design parameters using available information
- The resulting PPE worksheet effectively became a representation of the SSCs that would comprise a surrogate facility for siting purposes

PPE Worksheet

- The current PPE worksheet is presented as a multi-page table
- Plant parameters are listed down the left-hand column
- Values for various technologies, *as selected by the applicant*, appear in the middle columns, along with footnotes

PPE Worksheet (cont.)

- Footnotes are extensively used
- Right-hand columns identify
  - The bounding values
  - The parameter's usage in the ESP application
  - Comments
- Bounding values are submitted as part of the ESP application

Plant Parameter

Values for Various Reactor Technologies

Bounding Value

Comments

PPE Section	ABWR	ABWR Notes See Table A-8	AP-1000	AP-1000 Notes See Table A-9	IRIS	IRIS Notes See Table A-10	GT-MHR	GT-MHR Notes See Table A-11	PBMR	PBMR Notes See Table A-12	ACR-700	ACR Notes See Table A-13	All - Comp Value[1] [Value for 2 Units in brackets][2]	Comp Notes See Table A-14	Usage[2]	Comments[3]
1 Structures																Visual resources impacts
1.1 Building Characteristics																
1.1.1 Height	123' 6"	(9)	234' 0"	(1)	105'	(1)	Building Height 81' 5" Reactor Cavity Cooling Stack 95' 6"	(1) (1)	134' 48"	(1)	197'	(1)	234' 0" [Same for 2nd unit/group]	(2)	ER	
1.1.1 Foundation Embedment	65' 4" to top of Basemat	(9)	39' 6" to bottom of Basemat from Plant Grade	(1)	49' 2"	(1)	140'	(1)	32' 8"	(1)	72'	(1)	140' [Same for 2nd unit/group]	(4)		The parameter no longer included in latest PPE table
1.2 Precipitation (for Roof Design)																
1.2.1 Maximum Rainfall Rate	19.4 in/hr (6.2 in/5 min)	(9)	19.4 in/hr (6.3 in/5 min)	(1)	19.4 in/hr (6.3 in/5 min)	(1)	19.4 in/hr (6.2 in/5 min)	(1)	19.4 in/hr (6.2 in/5 min)	(1)	19.4 in/hr	(1)	19.4 in/hr (6.3 in/5 min) [Same for 2nd unit/group]	(2, 3)	SAR	
1.2.2 Snow Load	50 lb/sq ft	(9)	75 lbs/sq ft on ground with exposure factor of 1.0 and importance factor of 1.2 (safety) and 1.0 (non-safety)	(1)	75 lbs/sq ft on ground with exposure factor of 1.0 and importance factor of 1.2 (safety) and 1.0 (non-safety)	(1)	50 lb/sq ft	(1)	50 lb/sq ft	(1)	60 lb sq ft	(1)	50 lb/sq ft [Same for 2nd unit/group]	(2, 3)	SAR	
1.3 Safe Shutdown Earthquake (SSE)																
1.3.1 Design Response Spectra	Regulatory Guide 1.60	(9)	Regulatory Guide 1.60	(1)	Regulatory Guide 1.60	(1)	Reg. Guide 1.60	(1)	Reg. Guide 1.60	(1)	Reg. Guide 1.60	(1)	Reg. Guide 1.60 [Same for 2nd unit/group]	(6)	SAR	
1.3.2 Peak Ground Acceleration	0.30 g	(9)	0.30 g	(1)	0.30 g	(1)	0.30g	(1)	0.30g	(1) (2)	0.30g	(1)	0.30g [Same for 2nd unit/group]	(6)	SAR	
1.3.3 Time History	Envelope SSE Resp Spectra	(9)	Envelope SSE Resp Spectra	(1)	Envelope SSE Resp Spectra	(1)	Envelope SSE Resp Spectra	(1)	Envelope SSE Resp Spectra	(1)	Envelope SSE Resp Spectra	(1)	Envelope SSE Resp Spectra [Same for 2nd unit/group]	(6)	SAR	
1.3.4 Capable Tectonic Structures or Sources	N/A		No fault displacement potential within the investigative area (in general within 200 miles of a site)	(2)	N/A		N/A		N/A		N/A		No fault displacement potential within the investigative area (in general within 200 miles of a site) [Same for 2nd unit/group]	(2)		The parameter never included in PPE table

2nd Unit

Usage

PPE Worksheet General Layout

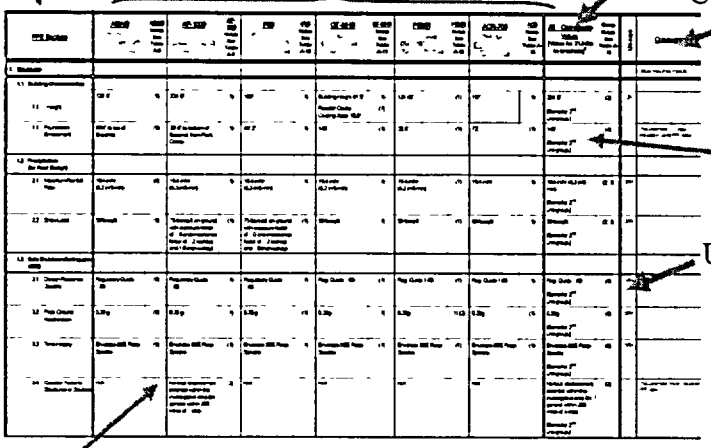
Footnote Column

Plant Parameter

Values for Various Reactor Technologies

Bounding Value

Comments



2nd Unit

Usage

PPE Worksheet General Layout

Footnote Column

Examples

Example #1

- The plant parameter is "building height"
- Building height is not used in the Site Safety Analysis Report
- Building height is not used in radiological release evaluations
- Building height is used in the following sections of the Environmental Report
  - Section 3.1, External Appearance and Plant Layout
  - Section 5.8.1, Physical Impacts of Station Operation

Example #1 (cont.)

Plant Parameter: 1.1.1 Building Characteristics, Height

Definition: The height in feet from finished grade to the top of the tallest power block structure (excluding cooling towers)

	ABWR	AP-1000	IRIS	GT-MHR	PBMR	ACR-700	Bounding Value	Usage
Building Height	123'8"	234'0"	105'	81.5' Reactor Cavity Cooling Stack 95 8'	134 48'	197'	234'0"	ER

- This applicant selected six technologies
- The tallest building height was chosen as the bounding value because of its use in the aesthetic ER assessment

Example #1a

Plant Parameter: Height

Definition: The height in feet from finished grade to the top of the tallest power block structure (excluding cooling towers)

	ABWR	AP-1000	IRIS	GT-MHR	PBMR	ACR-700	Bounding Value	Usage
Height	123'8"	2[illegible]4'0"	1[illegible]5'	81 5' Reactor Cavity Cooling Stack 95 8'	134 48'	197'	197'	ER

This applicant selected four technologies to establish a different bounding parameter value of 197 ft.

Example #2 (cont.)

- The plant parameter is "cooling tower height"
- There are different types of cooling towers. The bounding value differs based on type
- In one instance, margin is added
- The parameter is used in environmental evaluations involving aesthetics and non-radiological plume analyses

Example #2 (cont.)

Plant Parameter: 2.4.8 Mechanical Draft Cooling Tower Height, or 2.5.8 Natural Draft Cooling Tower Height

Definition: The vertical height above finished grade of either natural draft or mechanical draft cooling towers associated with the cooling water systems.

	ABWR	AP-1000	IRIS	GT-MHR	PBMR	ACR-700	Bounding Value	Usage
Mechanical Draft CT Height	60 ft	60 ft	60 ft	55 ft	60 ft	60 ft	65 ft	ER
Natural Draft CT Height	550 ft	500 ft	550 ft	N/A	490 ft	550 ft	550 ft	ER
Selection A							65 ft	
Selection B							550 ft	

Note that the applicant may limit the types of cooling systems utilized at the site by the selection of parameters.

Example #2 (cont.)

- In Examples 1 and 2, there is no corresponding site characteristic
- The PPE bounding value is compared to appropriate regulatory criteria to determine the acceptability of the site
- The applicant would seek NRC approval of the PPE value
- Now lets examine a parameter that also involves a site characteristic

Example #3

- The site characteristic is "snow load"
- The vendors have each assumed certain snow loads for their designs
- Snow load is used in the site safety analysis report to address regional climatology

Example #3 (cont.)

Plant Parameter: 1.2.2, Snow Load

Definition: The maximum load on structure roofs due to the accumulation of snow.

	ABWR	AP-1000	IRIS	GT-MHR	PBMR	ACR-700	Bounding Value	Usage
Snow Load	50 lb/sq ft	75 lb/sq ft	75 lb/sq ft	50 lb/sq ft	50 lb/sq ft	60 lb/sq ft	50 lb/sq ft	SAR

- The applicant selects the lowest value (i.e., the minimum structural load) as the bounding value because it maximizes flexibility
- Applicant determines site characteristic value, e.g., 30 psf or 80 psf

Example #3 (cont.)

- Case A: The bounding value is compared to the site characteristic

Parameter	Bounding Value	Site Characteristic	Permit Basis
Snow Load	50	30	30

- Whenever there is a site characteristic, the applicant will seek approval of the site characteristic
- Case B: Where bounding values do not support the site characteristic, further action in design certification or combined license activities would be required

Parameter	Bounding Value	Site Characteristic	Permit Basis
Snow Load	50	80	80

PPE Values, Site Characteristics, and the Permit Basis

Parameter	Bounding Value	Site Characteristic	Permit Basis
Building Height	234	None	**234**
Snow Load (Case A)	50	30	**30**
Snow Load (Case B)	50	80	**80**

- Applicants will submit a combination of bounding design parameter values and site characteristics
- The combination of bounding design parameter values and site characteristics form the "permit basis"

MECHANISM FOR RESOLUTION OF ESP ISSUES

	Project No. 689		Project Nos. 720/719/718		
NEI/ ESP Applicant	Generic Meetings	NEI Letter	Applicant Meetings		
			Submittals		
NRC Staff	Generic Meetings	Staff Letter	Site Visits	*Inspections	Staff Reports
			Trip Reports	Requests for Information (RAIs)	
OUTCOMES					
	INFORM/ OBTAIN FEEDBACK	GENERIC ISSUE RESOLUTION			(PRE) APPLICATION REVIEW DISPOSITION

Steps for Issue Resolution

1- Define Problem
2- Discuss the Problem and Implications on Parties Involved
3- Discuss Alternatives
4- Discuss Implementation of Proposed Approach
5- NEI/ Applicant submit proposed resolution
6- Staff issue final position

* IF APPLICABLE

ESP Topics Current Activity

Number	Title	Status	Lead	Next Action
1	ESP application templates	DO	NEI	
2	ESP Inspection Guidance	NFD	NRC	Preapplication activities underway
3	QA requirements of ESP information	NFD	NRC	QA plan submittals to be reviewed by staff
4	Nominal NRC review timeline	DO	NRC	
5	Mechanism for documenting resolution of ESP issues	DO	NRC	Agree on format/content
6	Use of bounding plant parameter envelope (PPE) approach	DO	NEI	
7	Guidance for satisfying 52.17(a)(1) requirement for description and safety assessment of the facility	DO	NEI	
8	Use of bounding approach for providing fuel cycle and transportation information required by NEPA (Tables S-3 and S-4)	TBD	NEI	
9	Criteria for assuring control of the site by the ESP holder	TBD	NEI	
10	Use of relevant findings from 10 CFR Part 51, Subpart B, Appendix B (License Renewal) in an ESP application	TBD	NEI	
11	Criteria for determining the initial duration of an ESP (10 - 20 years)	TBD	NEI	
12	Guidance for NEPA requirement to evaluate severe accident mitigation alternatives	NFD	NRC	SAMAs analysis dependent on information provided
13	Guidance for seismic evaluations required by 10 CFR Part 50, Appendix S	DO	NEI	
14	Applicability of Federal requirements to evaluate Environmental Justice	TBD	NEI	
15	The site redress plan	TBD	NEI	

Number	Title	Status	Lead	Next Action
16	Guidance for approval of "complete" emergency plans	TBD	NEI	
17	Duplicative reviews (PRM-52-1)	HOLD		Pending petition disposition
18	Review of alternatives (PRM-52-2)	HOLD		Pending petition disposition
19	Addressing effects of potential new units at an existing site: a) Impacts due to operations of new units, b) Impacts due to construction of new units	TBD	NEI	
20	Practical use of existing site/facility information. a) Incorporation in ESP applications, b) Implications for NRC reviews	TBD		
21	Understanding the interface of ESP with the COL process	TBD		
22	Form and content of an ESP	TBD		

ESP Issue Description

Issue Number 1

Title ESP application templates

Background The industry is proposing to use templates in preparing an ESP application. Presently, there are three templates being considered: Table of contents for the application - this template provides a generic table of contents. We envision this template as providing consistency in applications in that the NRC staff will know where to find certain information. Common analyses - We will identify technical analyses that must be performed. Although site-specific information may vary, the use of a generic analysis would result in a uniform approach and level of detail. The seismic probability assessment is an example. The seismic data would vary by site and region, but the analysis methodology, overall approach, and output form would be consistent. Another area could be the environmental report. Environmental data would vary by site and region, but the overall approach, methodology, style and level of detail would be consistent. Common technology descriptions - We will work to coordinate common descriptions of various reactor technologies. The descriptions would be utilized by several applicants to describe the designs being considered. The descriptions would be inserted in the "Description of the Proposed Facility" section of the ESP application's Site Safety Analysis Report.

Industry Position Providing information in the manner described above enhances commonality and consistency in content, style, and level of detail. The approach will minimize the likelihood for additional questions based on apparent different approaches or methodologies, level of detail, etc. Such standardization will improve NRC review efficiency and support effective use of resources.

Current Views:

Date	*Organization*	*View*
7/16/02	NEI	NEI provided a draft document entitled "Standard Table of Contents for Early Site Permit Applications" and requested that the staff review
8/22/02	NEI	After describing the format of the Common Table of Contents, NEI took an action item to develop any further questions for staff consideration for the next meeting which they will transmit 2 weeks prior to the meeting date
8/22/02	NRC	The staff provided a response to NEI via e-mail on August 19, 2002 to the NEI draft document entitled "Standard Table of Contents for Early Site Permit Applications" which was distributed during the July 16, 2002 meeting.

Issue Number 2

Title ESP Inspection Guidance

Background The NRC is proposing to use Inspection Manual Chapter (IMC) 2511 "Light Water Inspection Program-Pre-CP Phase" and its associated inspection procedures for ESP. Additionally, there is some question as to whether the existing guidance (i.e. IMC-2511) is applicable to an ESP application. Further, for some of the ESP requirements, guidance may not exist or be applicable. An example is sever accidents. NRC's NEPA implementing regulation requires an analysis of severe accident mitigation alternatives. However, there is no specific guidance for conducting the analysis for an ESP. There is guidance for such an analysis in the NUREG-1555 but that only applies to license renewal.

Industry Position Public meetings hosted by the NRC and/or applicants, technical meetings between NRC and applicants at or on site, and NRC inspection activities are all anticipated at potential ESP sites. Industry will work with NRC to coordinate those activities so that they are conducted in an efficient and timely manner.

Current Views:

Date	*Organization*	*View*
1/10/02	NRC	The staff requested NEI to identify the differences between Inspection Manual Chapter 2511 and 2512 and what the industry proposed to apply.
4/24/02	NEI	NEI expressed concern that the seven steps outlined in a February 22, 2002 letter are "compliance based", meaning that findings in an audit during an ESP application review would be similar to violations of regulations. NEI is also concerned that the use of inspection procedures for an audit is not appropriate.
4/24/02	NRC	Staff replied that formal inspection procedures will be used to ensure consistency during audits. Inspection Manual Chapter (IMC) 2511A is being revised to more specifically address the protocol for performing ESP application review audits. Staff will provide a schedule as to when the first draft of IMC 2511A will be available for public comment.
4/24/02	NRC	Staff discussed the need for the NRC to conduct pre-application activities in order to verify that the technical, quality and administrative requirements are effectively met during the collection of data and information used in the ESP application, to introduce the local public to the ESP licensing process, and to initiate pre-application meetings with the applicant to resolve any specific application concerns.
7/16/02	NRC	The staff gave a presentation detailing the scope and nature of the ESP pre-application environmental site visit.

Issue Number 3

Title QA requirements of ESP Information

Background This topic focuses on quality assurance requirements for preparing an ESP application. NRC is proposing to use IMC-2511 which has two Inspection Procedures (IP-35002 and IP-35016) related to QA

Industry Position ESP applicants will have a quality assurance program that meets 10 CFR Part 50 requirements. Typically, existing utility QA programs require that a quality assurance plan to support the development and ESP application to be developed and implemented. That plan is a construction QA plan. Acceptable models for developing such a construction QA plan include NQA-1, which specifically includes "siting" activities within its scope, or QA plans for late-model operating reactors

Current Views:

Date	*Organization*	*View*
1/10/02	NEI	NEI stated that they believe that 10 CFR Part 52 does not require that an ESP be prepared under the full quality assurance requirements of Appendix B of 10 CFR Part 50.
1/10/02	NRC	The staff stated that in order for the NRC to rely on the data acquired and calculations performed to support an ESP application, an appropriate quality assurance program needed to be applied to these activities. There must be a high degree of assurance that the information has been obtained and analyzed correctly.
4/24/02	NEI	NEI stated that all applicants will have programs/plans to provide for quality assurance (QA) of data for ESP applications.
5/28/02	NEI	NEI responded to the NRC's proposed process in a May 20, 2002, letter (ADAMS Accession Number ML021680023). NEI explained that a blanket use of an existing operating plant QA program was problematic for several reasons including: QA program and procedures were written specifically for operating plant structures, systems and components, and not for siting studies; organizational differences between operating company and entities exploring ESPs; and intra-company restrictions. NEI then provided an example based on Entergy's ESP application to illustrate the point.
5/28/02	NRC	In a February 22, 2002, letter, (ADAMS Accession Number ML020590120) the staff provided a proposed process for interactions with the applicants to resolve issues associated with ESP data collection QA as soon as possible. Staff indicated that high-level discussions regarding QA for ESP data collection made it difficult for the staff to identify potential issues. The staff stated that although there is no requirement for an NRC pre-application review of an applicant's QA plan, the staff believes that such a review would be beneficial for ensuring that the ESP review is completed in a timely matter.
6/13/02	NEI	On the action to consider whether or not to submit a pre-application Quality Assurance (QA) data collection plan, the applicants responded that they would submit their plan to the staff on the following timetable: Exelon - August 2002; Entergy - 3 to 4 weeks from the date of the subject meeting; and Dominion - September 2002. Each applicant will request the level of NRC review to be applied to their individual QA Plan in their letter of submittal.

Issue Number 4

Title Nominal NRC review timeline

Background The industry developed a draft review schedule for an ESP application. As applicable, the schedule is based on regulatory requirements.

Industry Position Industry sees a number of parallels between the ESP process and license renewal. We believe that the success of license renewal can be replicated in the new plant licensing processes through focused technical review efforts, commonality, and attention by senior management. The recently initiated senior management meetings provide a good forum for maintaining that focus.

Current Views:

Date	Organization	View
4/24/02	NEI	NEI requested feedback on the schedule they handed out during the 4/1/02 meeting with senior NRC management.
4/24/02	NRC	Staff agreed to provide feedback on the subject schedule.
5/24/02	NRC	Staff stated that it was developing an integrated schedule for the ESP reviews based on the ESP applicant submittal dates and that feedback would be provided to NEI by September 2002, on its proposed timeline.

Issue Number 5

Title Mechanism for documenting resolution of ESP issues

Background As ESP issues are resolved; there should be some mechanism for capturing the resolution of such issues. Also, as ESP applications go through the review process, there will be lessons learned that should also be captured.

Industry Position State-of-the-art information management techniques and technology will be utilized to enhance the effectiveness and efficiency. NRC and industry should work cooperatively to facilitate such communications and information exchange.

Current Views:

Date	Organization	View
4/24/02	NEI	NEI suggested that issues resolved during meetings should be documented in a format similar to that in the handout
4/24/02	NRC	NRC responded that meetings were held for information exchange rather than for issue resolution. Therefore issue resolution will be documented in a separate format.
5/28/02	NEI	See NRC view below.
5/28/02	NRC	Regarding ESP issue status summaries, the staff stated that they envisioned a process similar to what was used for license renewal to track generic issues associated with an ESP review. The staff and NEI took an action to work out the details of a common database for tracking the resolution of issues and to identify which issues are generic and which are applicant-specific for future meetings.
6/13/02	NRC	The staff provided a sample Issue Tracking Summary for comment.

Issue Number 6

Title Use of bounding plant parameter envelope (PPE) approach

Background Part 51, Subpart A delineates the information that must be included in an early site permit application. In some instances, this information is a value. For example, 52.17(a)(1)(iv) states that the application must contain the maximum level of radiological and thermal effluents each facility will produce and 52.17(a)(1)(v) requires a description of the type of cooling systems, intakes, and outflows that may be associated with each facility. For certified designs, the associated PPE may have values that could be used to satisfy the two examples cited above. However, if the reactor type has not been selected, it is not clear how the rule provisions, noted in the examples, are satisfied.

Industry Position Applicants may submit bounding plant parameters. The applicants determine those bounding values. Additional reasonable conservations may be included in the proposed bounding values. The applicant need not justify or submit the basis for each bounding value and accepts the risk that a specific technology parameter later addressed as part of a COL application may exceed the bounding value accepted at the ESP stage. Any such variances would be addressed at the COL stage on a case basis. In certain instances, a bounding parameter approach appears impracticable. For example, some icing effects can only be considered in the context of specific designs. In such instances, applicants are expected to provide sufficient detailed design information for specific reactor types that could reasonably be expected to be built on the proposed site.

Current Views:

Date	Organization	View
1/10/02	NEI	NEI indicated that they wanted to use their plant parameter envelope (PPE) approach for a gas-cooled reactor, using bounding values where appropriate. NEI further asked how the staff would address a request for an exemption to an ESP.
1/10/02	NRC	The staff indicated that this approach may not necessarily be acceptable for the environmental review (where the evaluation is related to the reasonable range of foreseeable impacts). Use of the PPE approach may cause the applicant to not comply with the National Environmental Policy Act of 1969 (NEPA) (for example, an extreme value may preclude consideration of one site that may be "obviously superior" than another site, or could require taking more land out of public use than would actually be necessary when considering nominal values)
1/10/02	NRC	The staff stated that ESPs were expected to be used by a company that did not know what specific plant design was going to be built. However, the staff expects that certain features of the plant will be known, such as whether it will be a BWR, PWR, or gas-cooled reactor of a certain power level. The staff is looking for more than a general description, and the applicant is going to have to make some type of projections.
6/13/02	NRC	Staff asked the following query: Severe Accident Mitigation Alternatives (SAMDAs) have been performed for each of the certified Advanced Light Water Reactor designs (based on reference site parameters), and could be applied to an ESP if the site parameters are bounded by the reference site parameters. For other reactor designs, a design- and site- specific SAMDA analysis would be needed. How do the applicants plan to address SAMDA requirements if the ESP application does not include a commitment to use one of the certified designs?
7/16/02	NEI	What would applicants receive with respect to an ESP approval given the use of the described PPE approach?

7/16/02	NEI	Please explain further the staff discussion referred to as a third alternative for treatment of the emergency planning licensing option for an ESP.
7/16/02	NEI	What is the definition of reactor type with respect to 10 CFR 52.17 (legal definition)? What is meant by the range of facilities cited in SECY-02-0077?
7/16/02	NEI	Is the bounding PPE approach consistent with the existing requirements of 52.17(a)(1), and/or the modified language proposed for the Notice of Proposed Rulemaking?
7/16/02	NEI	NEI provided a presentation on the subject issues. In addition to the ESP-6 and ESP-7 documents e-mailed to the staff on July 10, 2002, the ESP Task Force (ESPTF) outlined their approach for the use of a Plant Parameter Envelope (PPE) for use in ESP applications. The ESPTF requested staff feedback on the approach presented, and responses to the following questions at the next meeting:
7/16/02	NEI	Whether specification of a particular set of designs used to develop the PPE values will preclude use of the ESP in later designs.
7/16/02	NRC	Would the number of reactors be identified under the subject approach as specified in 10 CFR 52.17?
7/16/02	NRC	Please explain the impact with respect to the environmental report which is required by 10 CFR 52.17 if the PPE values are pessimized to capture or bound a large set of reactor types and reactor designs?
8/22/02	NEI	The NEI presentation conveyed the following new points regarding the subject approach: (1) Revised August 21, 2002 Form and Content of a Early Site Permit to be granted by the NRC Commission would not specify type of reactor; (2) Applicants will not specify the type of plant (e.g , Pressurized-Water Reactor (PWR), Gas - Cooled Reactor) however, the technical basis used to develop the PPE would be fully disclosed to the staff; (3) The COL action to build 1 out of 3 facilities approved by the ESP under the PPE framework for a given site would not reopen the alternative sites issue if previously closed out in the ESP; (4) ESPTF would accept the business risk associated with the fact that staff approval of the PPE parameters would not imply future approval of those parameters for any design; and (5) ESP terminology and working definitions for Part 52 were introduced for future meetings.
8/22/02	NRC	The staff provided a response to NEI documents ESP-6 and ESP-7 that emphasized the following concerns with the use of a Plant Parameter Envelope (PPE) approach in ESP applications: (1) Information provided to date is conceptual and abstract in nature. Specific application or case studies are needed in order to test the bounds of the required staff review effort; (2) For the staff's environmental review the surrogate facility information needs to result in a realistic and realizable construct for staff evaluation; and (3) ESP-6 and ESP-7 proposes to defer disposition of ESP review items until the Combined Operating License stage. Any future COL Action Items dilutes the value of the ESP.

Issue Number 7

Title Guidance for satisfying 52.17(a)(1) requirement for description and safety assessment of the facility

Background This language becomes problematic when the applicant has not decided on the reactor type

Industry Position Information from the reactor vendors can be utilized to establish source terms and postulated accident scenarios. Site environmental information can be utilized to establish atmospheric dispersion factors. Again, a bounding approach based on assuming potential siting of various reactor technologies can satisfy this requirement.

Current Views:

Date	Organization	View
1/10/02	NEI	See ESP-6 discussion.
1/10/02	NRC	See ESP-6 discussion.
6/13/02	NRC	Staff asked the following questions: How do the applicants plan to satisfy the subject requirements for other than the light-water reactor designs? How do the Applicants plan to establish/ characterize radiological release categories and their respective frequencies for use in the environmental assessment of Class 1 through 9 accidents?
7/16/02	NEI	See ESP-6 discussion.
7/16/02	NRC	See ESP-6 discussion.
8/22/02	NEI	See ESP-6 discussion.
8/22/02	NRC	See ESP-6 discussion.

Issue Number 8

Title Use of bounding approach for providing fuel cycle and transportation information required by NEPA (Tables S-3 and S-4)

Background The NRC NEPA implementing regulation (10 CFR Part 51) requires an assessment of the environmental impacts associated with transportation of fuel and waste to and from the reactor. Presently, the regulation only addresses light water cooled reactors.

Industry Position A bounding approach to address fuel cycle and transportation issues exemplified in Tables S-3 and S-4 appears reasonable and doable in the timeframes being suggested by industry and NRC.

Current Views:

Date	Organization	View
1/10/02	NEI	NEI asked the staff to discuss its plans for updating Table S-3 and S-4 of 10 CFR Part 51.
1/10/02	NRC	The staff replied that it has begun working on updating the tables, with its initial emphasis focused on addressing light water reactor issues (for example, higher burnup and higher enrichment fuels).

Issue Number 9

Title Criteria for assuring control of the site by the ESP holder

Background Subpart A stipulates that "Any person..." may file an ESP application. As the electric power industry moves to deregulation, it is likely that the early site permit holder may not be the owner/operator of the nuclear power plant that is ultimately constructed.

Industry Position

Current Views:

Date	Organization	View
1/10/02	NEI	NEI asked what level of detail would be expected in the redress plan of an ESP application.
1/10/02	NRC	The staff suggested that NEI review the redress plan submitted for the Clinch River Breeder Reactor, and look at NUREG-1555, "Environmental Standard Review Plan," for guidance.

Issue Number 10

Title Use of relevant findings from 10 CFR Part 51, Subpart B, Appendix B (License Renewal) in an ESP application

Background 10 CFR Part 51, Appendix B codifies findings related to environmental impacts for license renewal. In some instances it would seem that the generic evaluation underlying the findings in Appendix B might be applicable to early site permitting.

Industry Position

Current Views:

Date	Organization	View
1/10/02	NEI	NEI asked if the findings in Appendix B to 10 CFR Part 51 concerning currently operating plants applying for license renewal could be applied to an ESP review.
1/10/02	NRC	The staff stated that the generic environmental impact statement (GEIS) for license renewal only applies to the units considered and only for the purposes of renewing a license. When it was developing NUREG-1437, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants," which was used to document the basis for Appendix B to 10 CFR Part 51, the staff knew the locations of the plants and how the environment had already been disturbed by the construction and operation of these plants. The staff made its findings based on known plant designs and set parameters, and were able to consider the performance of the plants evaluated. There is a different basis and regulatory structure under which a license renewal of a currently operating plant is reviewed than that which will be applied to an ESP application.

Issue Number 11

Title Criteria for determining the initial duration of an ESP (10 - 20 years)

Background The regulations state that the permit is neither valid for not less than 10 years nor greater than twenty.

Industry Position

Current Views:

Date	Organization	View
1/11/02	NEI	NEI asked why there is a range of "not less than 10 years nor greater than 20" for an ESP.
1/11/02	NRC	The staff stated that during the rulemaking of 10 CFR Part 52, there was a request to specify a minimum and maximum duration. The staff indicated that the basis for granting an ESP might be subject to changing conditions over time (for example, zoning). Additional consideration by the staff that may result in limiting the duration of the ESP includes the level of information provided in the application, how well information is known, and the potential for parameters to change over time. The staff expects the applicant to specify the duration for an ESP that it is seeking.

Issue Number 12

Title Guidance for NEPA requirement to evaluate severe accident mitigation alternatives

Background See Item #2

Industry Position

Current Views:

Date	Organization	View
1/10/02	NEI	NEI raised a question concerning how to perform a SAMA review if the design was not yet determined.
1/10/02	NRC	The staff indicated that the applicant is going to have to make some type of projection concerning the design of the plant, but agreed to continue to discuss this issue with them.
7/16/02	NEI	NEI distributed draft document ESP-12 during the meeting.
8/22/02	NEI	The staff provided a response to NEI via e-mail on August 19, 2002 to the NEI ESPTF draft document ESP-12 which was distributed during the July 16, 2002 meeting. After some discussion, it was agreed that the staff would seek to perform SAMA analyses depending on the detail of the information available in the ESP application. Therefore, further discussion on this topic will be deferred until the resolution of the plant parameter envelope (PPE) issues by the staff and the NEI ESPTF.

8/22/02	NRC	The staff provided a response to NEI via e-mail on August 19, 2002 to the NEI ESPTF draft document ESP-12 which was distributed during the July 16, 2002 meeting. After some discussion, it was agreed that the staff would seek to perform SAMA analyses depending on the detail of the information available in the ESP application. Therefore, further discussion on this topic will be deferred until the resolution of the plant parameter envelope (PPE) issues by the staff and the NEI ESPTF.

Issue Number 13

Title Guidance for seismic evaluations required by 10 CFR Part 50, Appendix S

Background

Industry Position

Current Views:

Date	*Organization*	*View*
1/10/02	NEI	NEI requested that the staff and industry meet to discuss implementation of the new requirements for seismic hazard characterization of sites stemming from the regulation in 10 CFR 100 23 and the associated criteria in Appendix S of 10 CFR Part 50 and Appendix A of 10 CFR Part 100, and in the guidance of Regulatory Guide 1.165. The industry proposed to meet with the staff to discuss the site-specific values of ground motion to be used in the analysis, and the type of analysis that needs to be performed.
1/10/02	NRC	The staff indicated that it would address questions that the industry may have as a result of undertaking a site-specific seismic hazard analysis. It further indicated that pre-application inspections would begin after the NRC staff receives a formal notification of intent to submit an ESP.
6/13/02	NEI	The NEI Early Site Permit Task Force (ESPTF) outlined their approach to applying existing regulatory guidance to ESP applications. The subject presentation conveyed the following points regarding the subject approach: (1) high level of reliance on existing data; (2) limited geotechnical investigations to support ESP applications; and (3) use of EPRI methodology, data and results. The NEI ESPTF requested staff feedback on the approach presented, and also whether there are any ongoing NRC activities linking seismic hazards and assistance with the identification of any unpublished regulatory material (i.e., staff documents being prepared).

6/13/02	NRC	The staff noted that applicable sections of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," were not cited in the NEI ESPTF presentation. The staff discussed the status of ongoing NRC research activities in the seismic hazards area. The staff understood the general approach described by the industry consultants in seismology and geotechnology and made the following points: 1) The staff intends to use the expertise from the USGS under a recent memorandum of agreement in siting reviews covering geology, seismology and hydrology. Dr. John Filson from the US Geological Survey (USGS) was in attendance for this purpose. 2) The EPRI probabilistic seismic hazard study was published in 1986 and would need to have its database for the PSHA updated. Similarly, the LLNL study, although updated in 1993, may need to be reassessed in the light of new information. The need for this update stems from the Regulatory Position #1 incorporated in RG 1.165. It was pointed out that the USGS national seismic hazard map is soon to be revised for its 2002 version. 3) It was suggested that geotechnical investigation is needed to characterize the site soil overburden over an area that is likely to contain safety significant buildings and multiple modules, as applicable. So the coverage of ground for geotechnical investigation may need to be more detailed than that described in the industry presentation. Otherwise, limitations and conditions may need to be attached to the ESP. 4) As more certified designs are reviewed and processed by the staff, the ESP applicants may need to pay closer attention to the certified designs for the site interface requirements and other detailed design considerations. Also the effect of deep embedment on pressure transmissibility may be a factor in the future designs.
7/16/02	NEI	NEI provided a discussion of the ESP applicants' plans in the area of the Seismic Demonstration Project. The ESP applicants took an action item to provide a detailed schedule of activities.

Issue Number 14

Title Applicability of Federal requirements to evaluate Environmental Justice

Background NEPA analyses for major federal actions require an Environmental Justice evaluation. Such an evaluation is required for ESP.

Industry Position

Current Views:

Date	*Organization*	*View*
1/10/02	NEI	NEI stated that they interpret a recent Supreme Court case on environmental justice to indicate that: 1. only recipients of Federal funding are required to have environmental justice reviews; and 2. because the nuclear industry does not receive Federal funding, the NRC does not have the authority to perform an environmental review on matters concerning nuclear plants. NEI is developing a white paper on the subject for future submittal to the staff.

Issue Number 15

Title The site redress plan

Background What is the appropriate level of detail in the site redress plan?

Industry Position The Clinch River Breeder Reactor plan dated March 5, 1984 was the last plan approved. We propose to use that plan as a model.

Current Views:

Date	Organization	View
1/10/02	NEI	What level of detail would be expected in the redress plan for an ESP application?
1/10/02	NRC	NEI should review the redress plan submitted for the Clinch River Breeder Reactor and look at NUREG 1555

Issue Number 16

Title Guidance for approval of "complete" emergency plans

Background The ESP regulations allow an applicant to submit proposed major features of the emergency plans proposed complete and integrated emergency plans.

Industry Position

Current Views:

Date	Organization	View

Issue Number 17

Title Duplicative reviews (PRM-52-1)

Background

Industry Position

Current Views:

Date	Organization	View
1/10/02	NEI	NEI asked the staff to address the status of the two petitions for rulemaking concerning alternative sites and use of existing operating plant data in an ESP.
1/10/02	NRC	The staff stated that the working group is reviewing the petitions and has not made a recommendation yet. Therefore, the Petition Review Board has not yet met.
7/16/02	NEI	NEI responded that matters outside of PRM-52-1 would be the subject of the discussion.

7/16/02	NRC	The staff informed NEI that discussion of PRM-52-1 and associated matters would be prohibited until the completion of the petition process.
8/22/02	NRC	The staff informed NEI that discussion of PRM-52-1 and associated matters would be prohibited until the completion of the petition process.

Issue Number 18

Title Review of alternatives (PRM-52-2)

Background

Industry Position

Current Views:

Date	Organization	View
1/10/02	NEI	See ESP-17 discussion.
1/10/02	NRC	See ESP-17 discussion.

Issue Number 19

Title Addressing effects of potential new units at an existing site: a) Impacts due to operations of new units, b) Impacts due to construction of new units

Background

Industry Position

Current Views:

Date	Organization	View

Issue Number 20

Title Practical use of existing site/facility information: a) Incorporation in ESP applications, b) Implications for NRC reviews

Background

Industry Position

Current Views:

Date	Organization	View

Issue Number 21

Title Understanding the interface of ESP with the COL process

Background

Industry Position

Current Views:

Date	Organization	View

Issue Number 22

Title Form and content of an ESP

Background

Industry Position

Current Views:

Date	Organization	View