



10 CFR 52.79

September 24, 2009
NRC3-09-0025

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington DC 20555-0001

References: 1) Fermi 3
Docket No. 52-033
2) Letter from Jerry Hale (USNRC) to Jack M. Davis (Detroit Edison),
"Request for Additional Information Letter No. 9 Related to the SRP
Sections Chapter 1, 05.03.02, 09.05.02.02, 13.01.01, 13.03, and 14.03.07
for the Fermi 3 Combined License Application," dated July 29, 2009

Subject: Detroit Edison Company Response to NRC Request for Additional Information
Letter No. 9

In the referenced letter, the NRC requested additional information to support the review of certain portions of the Fermi 3 Combined License Application (COLA). The responses to the following Requests for Additional Information (RAIs) are provided as Attachments 1 through 9 of this letter:

- | | |
|---------------------------|---|
| • RAI Question 13.01.01-1 | Radiation Protection Technicians |
| • RAI Question 13.01.01-2 | Radiation Protection Manager |
| • RAI Question 14.03.07-1 | Mobile Liquid Radwaste System |
| • RAI Question 14.03.07-2 | Mobile Solid Radwaste System |
| • RAI Question 09.05.02-1 | Emergency Communication Systems |
| • RAI Question 05.03.02-1 | Pressure and Temperature Limits Report (PTLR) |
| • RAI Question 13.03-17 | Emergency Action Level (EAL) Scheme |
| • RAI Question 01-1 | Disposal of High-Level Radioactive Waste and Spent Nuclear Fuel |
| • RAI Question 01-2 | Receipt, Possession and use of Source, Byproduct and Special Nuclear Material |

Information contained in these responses will be incorporated into a future COLA submission as described in the RAI response.

Detroit Edison informed the NRC Fermi 3 Project manager in a telephone conversation September 9, 2009 that the remaining 16 RAIs, all related to the Evacuation Time Estimate will be provided to the NRC by October 14, 2009.

If you have any questions, or need additional information, please contact me at (313)235-3341.

I state under penalty of perjury that the foregoing is true and correct. Executed on the 24th day of September 2009.

Sincerely,



Peter W. Smith, Director
Nuclear – Licensing & Engineering
Detroit Edison Company

- Attachments: 1) Response to RAI Letter No. 9 (Question No. 13.01.01-1)
2) Response to RAI Letter No. 9 (Question No. 13.01.01-2)
3) Response to RAI Letter No. 9 (Question No. 14.03.07-1)
4) Response to RAI Letter No. 9 (Question No. 14.03.07-2)
5) Response to RAI Letter No. 9 (Question No. 09.05.02-1)
6) Response to RAI Letter No. 9 (Question No. 05.03.02-1)
7) Response to RAI Letter No. 9 (Question No. 13.03-17)
8) Response to RAI Letter No. 9 (Question No. 01-1)
9) Response to RAI Letter No. 9 (Question No. 01-2)

cc: Jack M. Davis, Senior Vice President and Chief Nuclear Officer
Mark Tonacci, NRC Fermi 3 Project Manager
Stephen Lemont, NRC Fermi 3 Environmental Project Manager
Fermi 2 Resident Inspector
NRC Region III Regional Administrator
NRC Region II Regional Administrator
Supervisor, Electric Operators, Michigan Public Service Commission
Michigan Department of Environmental Quality
Radiological Protection and Medical Waste Section

**Attachment 1
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3160)**

RAI Question No. 13.01.01-1

NRC RAI 13.01.01-1

A review of Fermi 3 FSAR, Rev. 1, Section 13.1.2.1.1.12 indicates that the listing of responsibilities for Radiation Protection Technicians is incomplete. Specifically:

a. The 4th item in the listing should be revised to include radioactive wastes destined for offsite processing, storage, and disposal.

b. A new item should be added to the current listing identifying responsibilities for managing radioactive liquid and gaseous effluent releases, and conducting radiological environmental monitoring in assessing offsite doses to members of the public.

The applicant is requested to revise the responsibilities of Radiation Protection Technicians in demonstrating compliance with Part 20.1301 and Appendix I to Part 50.

Response

FSAR Section 13.1.2.1.1.12 will be revised to include additional responsibilities for Radiation Protection Technicians that address:

- Control over radioactive wastes destined for offsite processing, storage, and disposal
- Management radioactive liquid and gaseous effluent releases and conduct radiological environmental monitoring in assessing offsite doses to members of the public

Proposed COLA Revision

FSAR Section 13.1.2.1.1.12 will be revised as shown in the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 2 pages)

protection department as listed in Subsection 13.1.1.2.3, to promote safe, legal, and efficient plant operation.

Radiation protection supervisors report to the radiation protection manager.

13.1.2.1.1.12 Radiation Protection Technicians

Radiation protection technicians (RPTs) directly carry out responsibilities defined in the radiation protection program and procedures. In accordance with Technical Specifications, an RPT is on site whenever there is fuel in the vessel.

The following are some of the duties and responsibilities of the RPTs:

- In accordance with authority delegated by the manager in charge of radiation protection, stop work or order an area evacuated (in accordance with approved procedures) when, in his or her judgment, the radiation conditions warrant such an action and such actions are consistent with plant safety
- Provide coverage and monitor radiation conditions for jobs potentially involving significant radiation exposure
- Conduct surveys, assess radiation conditions, and establish radiation protection requirements for access to and work within restricted, radiation, high radiation, very high radiation, airborne radioactivity areas, and areas containing radioactive materials
- Provide control over the receipt, storage, movement, use, and shipment of licensed radioactive materials ← Add Insert "1" Here
- Review work packages, proposed design modifications, and operations and maintenance procedures to facilitate integration of adequate radiation protection controls and dose-reduction measures
- Review and oversee implementation of plans for the use of process or other engineering controls to limit the concentrations of radioactive materials in the air
- Provide personnel monitoring and bioassay services
- Maintain, prescribe, and oversee the use of respiratory protection equipment
- Perform assigned emergency response duties.

Add Insert "2" Here →

Insert 1

, including radioactive wastes destined for offsite processing storage, and disposal

Insert 2

- Manage radioactive liquid and gaseous effluent releases and conduct radiological environmental monitoring in assessing offsite doses to members of the public

**Attachment 2
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3161)**

RAI Question No. 13.01.01-2

NRC RAI 13.01.01-2

A review of Fermi 3 FSAR, Rev. 1, Section 13.1.2.1.1.10 indicates that the listing of responsibilities for the Radiation Protection Manager is incomplete. The 7th item in the listing should be revised to include programs for managing radioactive liquid and gaseous effluent releases and associated offsite doses, in addition to managing radioactive wastes. The applicant is requested to revise the responsibilities of the Manager in demonstrating compliance with Part 20.1301 and Appendix I to Part 50.

Response

FSAR Section 13.1.2.1.1.10 will be revised to include an additional responsibility for the Manager of Radiation Protection and Chemistry regarding the management of programs addressing radioactive liquid and gaseous effluent releases and associated offsite doses.

Proposed COLA Revision

FSAR Section 13.1.2.1.1.10 will be revised as shown in the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 2 pages)

13.1.2.1.1.9 **Outage and Planning Manager**

The outage and planning manager is responsible for the support functions described in Subsection 13.1.1.2.5. This manager safely fulfills the responsibilities of planning and scheduling all plant work through a staff which includes a functional manager in each area of planning, scheduling, and outages. The outage and planning manager reports to the plant manager.

13.1.2.1.1.10 **Radiation Protection Manager**

The radiation protection manager has the direct responsibility for providing adequate protection of the health and safety of personnel working at the plant and members of the public during activities covered within the scope and extent of the license. This manager's radiation protection responsibilities are consistent with the guidance in RG 8.8 and RG 8.10. They include:

- Managing the radiation protection organization
- Establishing, implementing, and enforcing the radiation protection program
- Providing radiation protection input to facility design and work planning
- Tracking and analyzing trends in radiation work performance and taking necessary actions to correct adverse trends
- Supporting the plant emergency preparedness program and assigning emergency duties and responsibilities within the radiation protection organization
- Delegating authority to appropriate radiation protection staff to stop work or order an area evacuated (in accordance with approved procedures) when, in his or her judgment, the radiation conditions warrant such an action and such actions are consistent with plant safety
- Managing the radioactive waste programs

Add Insert "1" Here →

The radiation protection manager reports to the plant S&L director and is assisted by the supervisors in charge of radiation protection.

13.1.2.1.1.11 **Radiation Protection Supervisors**

The supervisors in charge of radiation protection are responsible for carrying out the day-to-day operations and programs of the radiation

Insert 1

- Managing programs that address radioactive liquid and gaseous effluent releases and associated offsite doses

**Attachment 3
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3163)**

RAI Question No. 14.03.07-1

NRC RAI 14.03.07-1

A review of Fermi 3 FSAR, Rev. 0, Part 10: Tier 1 ITAAC, Section 2.4.9 indicates that it still refers to a mobile system as being outside of the scope of the certified design. The ESBWR DCD, Rev. 5, Tier 2, Section 11.2 and DCD, Rev. 5, Tier 1 Section 2.10.1 no longer refer to the use of a mobile LWMS. Accordingly, the applicant is requested to revise the designation of the LWMS in FSAR Rev. 0, Part 10: Tier 1, Section 2.4.9 and make it consistent with the corresponding designations of Tier 1 and 2 Sections of the ESBWR DCD, Rev. 5.

Response

The design of the Liquid Waste Management System (LWMS) is no longer conceptual and is now within the scope of the ESBWR standard plant design, as reflected in the DCD, Revision 5, Tier 2, Section 11.2. DCD Tier 1, Section 2.10.1, *Liquid Waste Management System*, addresses all necessary ITAAC for the LWMS. Therefore, COLA Part 10, *Tier 1/ITAAC*, Section 2.4.9 will be deleted.

Proposed COLA Revision

COLA Part 10, Tier 1/ITAAC, Section 2.4.9 will be revised as shown on the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 1 page)

2.4.9 ~~MOBILE LIQUID RADWASTE SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)~~ (Deleted)

No entry for this system.

**Attachment 4
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3164)**

RAI Question No. 14.03.07-2

NRC RAI 14.03.07-2

A review of Fermi 3 FSAR, Rev. 0, Part 10: Tier 1 ITAAC, Section 2.4.10 indicates that it still refers to a mobile system as being outside of the scope of the certified design. The ESBWR DCD, Rev. 5, Tier 2, Section 11.4 and DCD, Rev. 5, Tier 1 Section 2.10.2 no longer refer to the use of a mobile SWMS. Accordingly, the applicant is requested to revise the designation of the SWMS in FSAR Rev. 0, Part 10: Tier 1, Section 2.4.10 and make it consistent with the corresponding designations of Tier 1 and 2 Sections of the ESBWR DCD, Rev. 5.

Response

The design of the Solid Waste Management System (SWMS) is no longer conceptual and is now within the scope of the ESBWR standard plant design, as reflected in the DCD, Revision 5, Tier 2, Section 11.4. DCD Tier 1, Section 2.10.2, *Solid Waste Management System*, addresses all necessary ITAAC for the SWMS. Therefore, COLA Part 10, *Tier 1/ITAAC*, Section 2.4. 10 will be deleted.

Proposed COLA Revision

COLA Part 10, *Tier 1/ITAAC*, Section 2.4.10 will be revised as shown on the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 1 page)

2.4.10 ~~MOBILE SOLID RADWASTE SYSTEM (PORTION OUTSIDE SCOPE OF CERTIFIED DESIGN)~~ (Deleted)

~~No entry for this system.~~

**Attachment 5
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3215)**

RAI Question No. 09.05.02-1

NRC RAI 09.05.02-1

COLA FSAR Tier 2, Section 9.5.2.2 under the heading "Emergency Communication Systems," for COL Item EF3 COL 9.5.2.5-1-A states, "Fermi also has multi-line Radiological Emergency Response Preparedness (RERP) telephones (Marked Emergency Use Only) that have an ENS button to allow access to the ENS." Further, the applicant states, "If the ENS is inoperable, the required notifications can be made via commercial telephone or any other method to ensure that a report is made as soon as practical." It is unclear if the RERP is intended as a backup to the ENS or an alternate access method to reach the ENS. The NRC staff request clarification if the RERP is intended as a backup to the ENS or an alternate access and what specific systems are referred to by, " ... the required notifications can be made via ... or any other method to ensure that a report is made as soon as practical."

Response

Fermi 3 has various communications systems available to communicate with offsite authorities. As stated in EF3 COL 9.5.2.2-1-A, The primary system for emergency communication is the Emergency Notification System (ENS) which is accessible in the Control Room by a dedicated phone instrument and also by an ENS selection button on the Radiological Emergency Response Preparedness (RERP) phone instrument.

There is no specific back-up system to the ENS. In the event the ENS is unavailable, notifications can be made through a number of alternate methods. These include the RERP phone system which, like the ENS is a battery backed dedicated phone system; the AT&T phone system which is intended to provide communication with local and state authorities; the commercial phone system; or utilizing 800 MHz band radio communications with the local law enforcement agencies. Any of these alternatives will suffice to provide the necessary notifications.

Proposed COLA Revision

FSAR Subsection 9.5.2.2 will be revision to clarify the Emergency Communication Systems in the event the ENS is unavailable, as shown in the attached mark-up.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 3 pages)

-
- 9.5.1-8-A Fire Protection Program Description**
STD COL 9.5.1-8-A This COL item is addressed in Subsection 9.5.1.15.
- 9.5.1-9-A Fire Protection Program License Changes**
STD COL 9.5.1-9-A This COL item is addressed in 9.5.1.15.2.
- 9.5.1-10-H Fire Brigade**
EF3 COL 9.5.1-10-H This COL item is addressed in 9.5.1.15.4 and 13.1.2.1.5.
- 9.5.1-11-A Quality Assurance**
STD COL 9.5.1-11-A This COL item is addressed in 9.5.1.15.9.

-
- DCD Table 9.5-2**
EF3-COL-9.5.1-1 Delete the "*" and "***" footnotes.

9.5.2 Communications System

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

9.5.2.2 System Design Description

Emergency Communication Systems

-
- Replace the last sentence of the first bullet with the following.
- EF3 COL 9.5.2.5-1-A** Add Insert "1" here → The Emergency Notification System (ENS) is a dedicated NRC FTS-2001 System that is normally used only for plant communication with the NRC. This system is independent from other site telephone systems. Electrical power for this phone system is provided by two redundant AC power sources. In addition, there are batteries, which would automatically supply power to these phones if a complete loss of AC power (to the phones) occurred. These batteries have an 8 hour capacity rating. This design ensures that the ENS located at the site is fully operable from the site in the event of a loss of offsite power at the site and is in compliance with the requirements of NRC Bulletin 80-15 for the ENS.
- As a part of the overall Fermi 3 Emergency Plan, the ENS provides a means for initial notifications, as well as ongoing communications about plant systems, status and parameters, to the NRC. ~~FTS-2001 telephones~~
- Add Insert "2" here →

~~for the ENS are located in the Control Room, Technical Support Center (TSC) and Emergency Operations Facility (EOF). The ENS phone lines connect via fiber optics to the local telephone company (Century Telephone Company) system. The ENS phones can also be used to communicate with offsite authorities if necessary (to make notifications if other systems fail, for example).~~

~~Fermi also has multi-line Radiological Emergency Response Preparedness (RERP) telephones (Marked Emergency Use Only) that have an ENS button to allow access to the ENS. This telephone system is normally fed from AC power; however, there are batteries which would automatically supply power to the telephones if a complete loss of AC power (to the telephones) occurred. These batteries have an 8 hour capacity rating.~~

~~If the ENS is inoperable, the required notifications can be made via commercial telephone or any other method to ensure that a report is made as soon as practical.~~

Replace the last bullet with the following.

EF3 COL 9.5.2.5-2-A

- Transmission System Operator Communications Link: Voice communications with the grid operator are provided via a Company-owned and -maintained transmission system that allows communications with the entire Corporate System. Access to this mode of transmission is made via the plant telephone system. A dedicated line is provided between the Control Room and the power system operator.

9.5.2.5 COL Information

9.5.2.5-1-A Offsite Interfaces

EF3 COL 9.5.2.5-1-A

This COL item is addressed in Subsection 9.5.2.2.

9.5.2.5-2-A Grid Transmission Operator

EF3 COL 9.5.2.5-2-A

This COL item is addressed in Subsection 9.5.2.2.

9.5.3 Lighting System

This section of the referenced DCD is incorporated by reference with no departures or supplements.

Insert 1

Fermi 3 has various communications systems available to communicate with offsite authorities. The primary system for emergency communication is the Emergency Notification System (ENS) which is accessible in the Control Room by a dedicated phone instrument and also by an ENS selection button on the Radiological Emergency Response Preparedness (RERP) phone instrument.

Insert 2

There is no specific back-up system to the ENS. In the event the ENS is unavailable, notifications can be made through a number of alternate methods. These include the RERP phone system which, like the ENS is a battery backed dedicated phone system; the AT&T phone system which is intended to provide communication with local and state authorities; the commercial phone system; or utilizing 800 MHz band radio communications with the local law enforcement agencies. Any of these alternatives will suffice to provide the necessary notifications.

**Attachment 6
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3286)**

RAI Question No. 05.03.02-1

NRC RAI 05.03.02-1

In a letter dated June 17, 2009 Dominion submitted a generic pressure and temperature limits report (PTLR) as part of the North Anna 3 R-COL application. The letter stated that the generic PTLR was developed by GEH and is expected to apply to all COL applicants referencing the ESBWR DCD. On this basis, the staff requests the following:

- A. Revise Fermi 3 S-COL Technical Specifications (TS) to reference the generic PTLR submitted by Dominion.*
- B. Revise Fermi 3 S-COL FSAR to add a statement that addresses the submittal of Pressure temperature limits using plant-specific material properties. For example, The COL Holder shall update the P/T limits prior to fuel load using the PTLR methodologies approved in the North Anna 3 R-COL and the plant-specific material properties. The COL Holder will inform the NRC of the updated P/T limits.*

This approach is consistent with NRC Generic Letter 96-03 which provides a method for a licensee that references a PTLR to inform the NRC of any subsequent change in P-T limits without a requirement for NRC approval if there are no changes to the approved PTLR methodology.

Response

On June 17, 2009, Dominion submitted the generic ESBWR reactor vessel pressure and temperature limits report (PTLR) to the NRC (Letter Serial No. NA3-09-023). This report used bounding material properties and projected fluences appropriate for all ESBWR COLAs including Fermi 3.

To align the Fermi 3 COLA commitments with the ESBWR R COLA the following changes will be made in response to RAI 05.03.02-1.

- A. Technical Specification 5.6.4 will be modified as shown on the attached mark-up.
- B. Detroit Edison will revise FSAR Section 5.3.1.5 to add a commitment to update the pressure-temperature limit curves to reflect plant-specific material properties, prior to fuel load.

Proposed COLA Revision

Technical Specification 5.6.4 will be revised as shown on the attached mark-up.
FSAR Section 5.3.1.5 will be revised as shown in the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

COLA Part 4 Technical Specifications
Section 5.6 Reporting Requirements
Subsection 5.6.4
(Following 3 pages)

5.6 Reporting Requirements

5.6.3 CORE OPERATING LIMITS REPORT (COLR) (continued)

3. MFN-027-86, J. Charnley (GE) to G. Lainas (NRC), Fuel Property and Performance Model Revisions, April 7, 1986.
 4. MFN-056-87, J. Charnley (GE) to M. W. Hodges (NRC), Revision 2 to Special Report MFB-170-84, Fuel Property and Performance Model Revisions, July 23, 1987.
 5. FLN-98-009 (MFN-037-98) G. Watford (GE) to J. H. Wilson (NRC), "Completion of Program to Confirm Elevated Concentration Gadolinia Fuel Performance Prediction Capability," September 8, 1998.
 6. FLN-99-007 (MFN-031-99); G. Watford (GE) to S. Dembek (NRC), Fuel Property and Performance Model Revisions, August 20, 1999.
 7. NEDE-33083P, Supplement 3, "TRACG Application for ESBWR Transient Analysis."
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

5.6.4

Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS REPORT (PTLR)

STD COL 16.0-2-A
5.6.4-1

- a. RCS pressure and temperature limits for heatup, cooldown, low temperature operation, criticality, and hydrostatic testing as well as heatup and cooldown rates shall be established and documented in the PTLR for the following:

LCO 3.4.4, "RCS Pressure and Temperature (P/T) Limits."
- b. The analytical methods used to determine the RCS pressure and temperature limits shall be those previously reviewed and approved by the NRC, specifically those described in the following documents:

5.6 Reporting Requirements

~~5.6.3~~

Reactor Coolant System (RCS) PRESSURE AND TEMPERATURE LIMITS
REPORT (PTLR) (continued)

Add insert "1"
here

5.6.4
STD COL 16.0-2-A
5.6.4-1

~~STD COL 46.0-4-A~~
~~5.6.5-1~~

~~[NOTE: The PTLR methodology is scheduled for submittal to the NRC in
the second quarter of 2009. The TS and Bases will be revised to
incorporate the citation of the methodology in the fourth quarter of 2009]~~

- c. The PTLR shall be provided to the NRC upon issuance for each reactor vessel fluence period and for any revision or supplement thereto.
-

Insert 1

Topical Report: NEDC – 33441 Revision 2, June, 2009,
“GE Hitachi Nuclear Energy Methodology for the Development
of ESBWR Reactor Pressure Vessel Pressure-Temperature Curves.”

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

FSAR Section 5.3, Subsection 5.3.1.5
STD COL 16.0-2-H
5.6.4-1
(Following 2 pages)

5.3 Reactor Vessel

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

5.3.1.5 Fracture Toughness Compliance with 10 CFR 50, Appendix G

Replace the last sentence in the first paragraph with the following.

STD COL 16.0-2-H 5.6.4-1

The pressure-temperature limit curves are developed in accordance with the Pressure and Temperature Limits Report, as discussed in the Technical Specifications Section 5.6.4 ← Add Insert "2" Here

5.3.1.8 COL Information for Reactor Vessel Material Surveillance Program

Replace this section with the following.

STD COL 5.3-2-A

The description of the reactor vessel material surveillance program is provided in DCD Section 5.3.1.6 is supplemented as follows.

A complete reactor vessel material surveillance program will be developed as described above in accordance with the implementation schedule provided in Section 13.4.

5.3.1.8.1 Locations of Capsules in Core Beltline Region

A total of four irradiation exposure specimen sets containing the required specimens are located near the vessel wall slightly above the core midplane. The irradiation exposure specimen sets are contained in specimen holders that are welded to the inner diameter of the core beltline forging. Each specimen holder houses two specimen containers that form the irradiation exposure set. The elevation and azimuth locations of the exposure specimen sets align with the maximum calculated fluence within the core beltline. Based on the location of the samples relative to the shell forging and their placement at the peak fluence location, the lead factors for the samples will be greater than 1.0. The lead factor for the specimens when placed at the peak location has been estimated to be 1.17.

Insert 2

[START COM 5.03-002] Prior to fuel load, the pressure-temperature limit curves will be updated to reflect plant-specific material properties, if required. **[END COM 5.03-002]**

**Attachment 7
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3298)**

RAI Question No. 13.03-17

NRC RAI 13.03-17

EALs are discussed in Section D, "Emergency Classification System," of the application, Part 5 Initial EALs, which are required by 10 CFR 50.47(b)(4) and Section IV.B of Appendix E to 10 CFR Part 50, must be approved by the NRC. The Fermi unit 3 combined license (COL) application does not fully address certain aspects of the required EAL scheme. This is because various equipment set points and other information cannot be determined until the as-built information is available; e.g., head corrections, radiation shine, final technical specifications, and equipment calculations and tolerances. The NRC has been evaluating possible options to ensure applicants address the regulations. The NRC is presenting the applicant with two options to satisfy its EAL obligations:

Option 1 – Submit an entire EAL scheme, which contains all site-specific information, including set points. Until this information is finalized, EALs would remain an open item.

Option 2 – Submit emergency plan Section D, "Emergency Classification System," which addresses the four critical elements of an EAL scheme (listed below). The NRC will determine the acceptability of the EAL scheme.

- Critical Element 1 – Applicant proposes an overview of its emergency action level scheme including defining the four emergency classification levels, (Notification of Unusual Event, Alert, Site Area Emergency, and General Emergency), as stated in NEI 99-01, Revision 5, with a general list of licensee actions at each emergency classification level.*
- Critical Element 2 – Applicant proposes to develop the remainder of its EAL scheme by using a specified NRC endorsed guidance document. In the development of its EALs, the proposed EALs should be developed with few or no deviations or differences from NRC guidance, other than those attributable to the specific reactor design. NEI 07-01, if endorsed, will be applicable to the AP1000 and ESBWR (passive) reactor designs, and NEI 99-01 is applicable to all (non-passive) reactor designs. If applicable, EALs related to digital instrumentation and control must be included.*
- Critical Element 3 – Applicant proposes a License Condition (LC) that the applicant will create a fully developed set of EALs in accordance with the specified guidance document. These fully developed EALs must be submitted to the NRC for confirmation at least 180 days prior to fuel load.*
- Critical Element 4 – The EALs must be kept in a document controlled by 10 CFR 50.54(q), such as the emergency plan, or a lower tier document, such as the Emergency Plan Implementing Procedures. Please review the two options provided above, identify which option will be chosen, and provide the detailed EAL information in support of the chosen option.*

Response

Detroit Edison will follow Option 2 for the Fermi 3 Combined License Emergency Plan. Currently, Subsection II.D of the Fermi 3 Combined License Emergency Plan discusses the EAL scheme based on NUREG-0654 and draft NEI 07-01 guidance. Appendix 3 of the Plan provides detailed initiating conditions (ICs) and Emergency Action Levels (EALs) based on the draft NEI 07-01 guidance. As discussed below, changes to the Fermi 3 Combined License Emergency Plan will be incorporated as described in the Application Revisions section of this response. The contents of Appendix 3 will be removed and Appendix 3 shown as "Not Used."

The Fermi 3 approach to each of the Critical Elements discussed in the NRC's Request for Additional Information is described below:

Critical Element 1 – Emergency Plan Subsection II.D.1 provides an overview defining the four emergency classification levels, with a general list of licensee actions at each emergency classification level.

In summary, emergency classification level definitions and associated licensee actions at each level currently are:

a. Unusual Event

Events are in process or have occurred that indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

The purpose of this classification is to bring the response personnel and offsite agencies to a state of readiness in the event of escalation to a more severe action level classification, and to provide for systematic handling of event information and related decision making.

Detroit Edison Actions:

1. Inform state and local offsite authorities of the nature of the unusual condition within 15 minutes following classification and notify the Nuclear Regulatory Commission (NRC) as soon as possible but within one hour.
2. Augment on-shift resources as needed.
3. Assess and respond.
4. Escalate to a more severe class, if appropriate, or
5. Close out with verbal summary to offsite authorities.

b. Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life

threatening risk to site personnel or damage to site equipment because of intentional malicious dedicated efforts of a hostile act. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

The purpose of this classification is to ensure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and provide offsite authorities with current status information.

Detroit Edison Actions:

1. Inform state and local authorities of Alert status and reason for Alert within 15 minutes following classification and to the NRC as soon as possible but within one hour.
2. Augment resources by activating the TSC, EOF, and OSC.
3. Assess and respond.
4. Mobilize and dispatch onsite monitoring teams with associated communication equipment if required.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases of radioactive material as specified for an Alert in Appendix 3 are occurring, provide dose estimates for those releases.
7. Escalate to a more severe class, if appropriate, or
8. Close out emergency class by verbal summary to offsite authorities.

c. Site Area Emergency

Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or security events that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

The purpose of the Site Area Emergency classification is to (1) assure that response centers are staffed; (2) assure that monitoring teams are dispatched; (3) provide consultation with offsite authorities, and (4) provide updates for the public through offsite authorities.

Detroit Edison Actions:

1. Inform state and local offsite authorities of Site Area Emergency status and reason for emergency within 15 minutes following classification and to the NRC as soon as possible, but within one hour.
2. Augment resources by activating the TSC, OSC, EOF and JIC.
3. Assess and respond.

4. Dispatch onsite and offsite monitoring teams with associated communication equipment if required.
5. Provide regular plant status updates to offsite authorities and periodic press briefings with offsite authorities.
6. Make onsite senior technical and management staff available for consultation with NRC and state authorities on a periodic basis.
7. Provide meteorological data and dose estimates to offsite authorities for potential/actual releases as appropriate.
8. Provide release data and dose projections based on available plant condition information and foreseeable contingencies.
9. Escalate to General Emergency classification, if appropriate, or
10. Close out or de-escalate emergency classification by briefing offsite authorities.

d. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or security events that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guidelines exposure levels offsite for more than the immediate area.

The purpose of the General Emergency classification is to: (1) initiate predetermined protective actions for the public; (2) provide continuous assessment of information from Detroit Edison and offsite organization measurements; (3) initiate additional measures as indicated by actual or potential releases; (4) provide consultation with offsite authorities; and (5) provide updates for the public through offsite authorities.

Detroit Edison Actions:

1. Inform state and offsite authorities of the General Emergency status, reason for emergency, and a minimum protective action recommendation (PAR) within 15 minutes following classification and the NRC as soon as possible, but within one hour.
2. Augment resources by activating the TSC, OSC, EOF, and JIC, if not already activated.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams with associated communications, if required.
5. Provide regular plant status updates to offsite authorities and periodic press briefings with offsite authorities.
6. Continually assess existing PAR for adequacy based on review of plant conditions, current and future meteorological data, dose estimates, field readings, and plant response efforts.
7. Make senior technical and management staff available onsite for consultation with NRC and State authorities on a periodic basis.

8. Provide meteorological data and dose estimates to offsite authorities for potential/actual releases.
9. Provide release data and dose projections based on available plant condition information and foreseeable contingencies.
10. Close out or de-escalate emergency class by briefing offsite authorities.

Section II.D of the Fermi 3 Combined License Emergency Plan will be revised to reflect minor changes to the classification level definitions as shown in the Markup of Detroit Edison COLA section of this response. In addition, the Markup shows minor revisions to the Definitions section of the Emergency Plan to include a minor change to the definition of “hostile action” and to add the defined term “imminent” to provide consistency with the definitions and licensee actions listed above.

Critical Element 2 – The remainder of the site-specific EAL scheme will be developed using the NRC-endorsed version of NEI 07-01, Rev. 0. The fully developed site-specific EAL scheme will be included in an Emergency Plan Implementing Procedure (EPIP), with no deviations from the NRC-endorsed version of NEI 07-01, Rev. 0. Accordingly, the current EAL scheme will be removed from Appendix 3 and Appendix 3 of the Emergency Plan will be noted as “Not Used” as shown in the Markup of Detroit Edison COLA section of this response.

Appendix 6 of the Emergency Plan includes in the list of EPIPs an EPIP addressing Emergency Classification. Section II.D of the Emergency Plan will be revised to refer to the applicable EPIP. In addition, several other changes will be made throughout the Emergency Plan to remove references to the NRC-endorsed version of NEI 07-01, Rev. 0 as the basis for EAL scheme and methodology used in the Fermi 3 Combined License Emergency Plan. References to the NRC-endorsed version of NEI 07-01, Rev. 0, will be removed from Emergency Plan Subsection II.D.2 and Appendix 1 - References as shown in the Markup of Detroit Edison COLA section of this response.

Critical Element 3 – The following License Condition related to the creation of a fully developed set of site-specific EALs is proposed in accordance with the guidance document discussed above:

PROPOSED LICENSE CONDITION:

The licensee shall submit a fully developed set of site-specific Emergency Action Levels (EALs) to the NRC in accordance with the NRC-endorsed version of NEI 07-01, Rev. 0, with no deviations. The fully developed site-specific EAL scheme shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

This License Condition will be added to Table 13.4-201.14 of the Final Safety Analysis Report (FSAR) (Part 2 of the COL Application) as shown in the Markup of Detroit Edison COLA section of this response.

Critical Element 4 – As discussed in Critical Element 2, the fully developed site-specific EAL scheme will be incorporated into a future EPIP. Accordingly, Section II.D.2 of the Emergency

Plan will be revised to indicate that future changes to the EPIP containing the EAL scheme will require an evaluation under 10 CFR 50.54(q) to determine if these changes will reduce the effectiveness of the Emergency Plan.

Proposed COLA Revision

In order to address changes to the Detroit Edison COLA Parts 2, 5, and 10 discussed in response above, the text will be modified as shown on the attached markup.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next appropriate update of the Fermi 3 COLA. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

Part 2 – FSAR, Chapter 13, Table 13.4-201
(Following 1 page)

Table 13.4-201 Operational Programs Required by NRC Regulations (Sheet 4 of 7)

[STD COL 13.4-1-A] [STD COL 13.4-2-A]

Item	Program Title	Program Source (Required by)	Section	Implementation	
				Milestone	Requirement
12.	Reactor Operator Training Program	10 CFR 55.13	13.2.1	18 months prior to scheduled fuel load	License Condition [COM 13.4-016]
		10 CFR 55.31			
		10 CFR 55.41			
		10 CFR 55.43			
		10 CFR 55.45			
13.	Reactor Operator Requalification Program	10 CFR 50.34(b)	13.2	Within 3 months after issuance of an operating license or the date the Commission makes the finding under 10 CFR 52.103(g)	10 CFR 50.54(i-1)
		10 CFR 50.54(i)			
		10 CFR 55.59			
14.	Emergency Planning	10 CFR 50.47	13.3	Full participation exercise conducted within 2 years prior to scheduled date for initial loading of fuel	10 CFR Part 50, Appendix E, Section IV.F.2.a(ii)
		10 CFR 50, Appendix E			

Licensee's

Onsite exercise conducted within 1 year prior to the schedule date for initial loading of fuel

10 CFR 50, Appendix E, Section IV.F.2.a(ii)

Applicant's detailed implementing procedures for its emergency plan submitted at least 180 days prior to scheduled date for initial loading of fuel

10 CFR 50, Appendix E, Section V

The licensee shall submit a fully developed set of site-specific Emergency Action Levels (EALs) to the NRC in accordance with the NRC-endorsed version of NEI 07-01, Rev. 0, with no deviations. The fully developed site-specific EAL scheme shall be submitted to the NRC for confirmation at least 180 days prior to initial fuel load.

License Condition
[COM 13.4-031]

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next appropriate update of the Fermi 3 COLA. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

Part 5 – Fermi 3 Combined License Emergency Plan (Following 14 pages)

Fermi 3

Combined License Application

Part 5 – Emergency Plan

Explanatory notes regarding the Emergency Plan and Supplemental Information

The Fermi 3 Combined License Emergency Plan consists of a basic plan and seven appendices. The basic plan follows the format of NUREG-0654 and provides detailed information regarding each of the sixteen *Planning Standards* and associated *Evaluation Criteria*. The seven appendices that follow provide additional detailed information on various aspects of the Emergency Plan. Supplemental information includes the Fermi 3 Nuclear Power Plant Development of Evacuation Time Estimates, certification letters, and current state and local emergency planning documents. Emergency Planning Inspections, Test, Analyses, and Acceptance Criteria (ITAAC) are included in COLA Part 10.

Emergency Plan	
Basic Plan	Fermi 3 Combined License Application Emergency Plan
Appendix 1	References
Appendix 2	Certification Letters
Appendix 3	Emergency Action Levels and Initiating Conditions ← Not Used
Appendix 4	Radiological Assessment and Monitoring
Appendix 5	Evacuation Time Estimate Summary
Appendix 6	Emergency Plan Implementing and Supporting Procedures (Typical List) and Procedure Cross-Reference to Plan
Appendix 7	Cross-References to NUREG-0654
Supplemental Information	
Nuclear Power Plant Development of Fermi Evacuation Time Estimates	
Certification Letters	
Cross-Reference to Regulations, Guidance, and State and Local Plans	
State and Local Emergency Planning Documents	
Michigan Emergency Management Plan	
Monroe County Management Plan	
Wayne County Operations Plan	
Michigan Department of Environmental Quality Nuclear Facilities Emergency Management Plan (NFEMP)	

Appendices

Not Used

Appendix 1 – References.....	A1-1
Appendix 2 – Certification Letters.....	A2-1
Appendix 3 – Emergency Action Levels	A3-1
Appendix 4 – Radiological Monitoring and Assessment.....	A4-1
Appendix 5 - Evacuation Time Estimate Summary.....	A5-1
Appendix 6 - Emergency Plan Implementing and Supporting Procedures (Typical List) and Procedure Cross-Reference to Plan	A6-1
Appendix 7 - NUREG-0654 Cross-Reference	A7-1

11. Emergency Planning Zone (EPZ): A generic area defined about a nuclear facility to facilitate offsite emergency planning and develop a significant response base. It is defined for the plume and ingestion exposure pathways.
12. Evacuation: The removal of people from an area on an emergency basis to avoid or reduce possible short term radiation exposure.
13. Exercise: An event that tests the integrated capability of a major portion of the basic elements existing within emergency preparedness plans and organizations.
14. Hostile Action: An act toward Fermi 3 or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate Detroit Edison to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. Hostile Action should not be construed to include the acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant. Non-terrorism-based EALs should be used to address such activities (e.g., violent acts between individuals in the owner-controlled area.)
15. Ingestion Exposure Pathway (IPZ): The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk or fresh vegetables. The duration of principal exposures could range in length from hours to months.
16. Joint Information Center (JIC): A center set up in a central location where public information officers from the involved agencies assemble to ensure coordination of information to be released to the media and the public. This center becomes the central point for media access to latest developments and emergency information. All information released is coordinated among the agencies involved to ensure consistency and accuracy.
17. Loss of Coolant Accident (LOCA): A loss of coolant accident can result from an opening in the primary cooling system, such as a pipe break or a stuck open relief valve.
18. Operational Support Center (OSC): An onsite emergency response facility which serves as an assembly area for dispatch of emergency support personnel (operations, maintenance, radiation protection, chemistry, fire protection) during an emergency.
19. Plume Exposure Pathway: The principal exposure sources from this pathway are external exposure to gamma radiation from the plume and from deposited materials and inhalation exposure from the passing radioactive plume.
20. Potassium Iodide (KI): A chemical compound that readily enters the thyroid gland when ingested. If taken in a sufficient quantity prior to exposure to radioactive iodine, it can prevent the thyroid from absorbing any of the potentially harmful radioactive iodine-131.
21. Projected Dose: An estimate of the potential radiation dose which affected population groups could receive.

16.

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22.

are

15. Imminent – Mitigation actions have been ineffective, additional actions are not expected to be successful, and trended information indicates that the event or condition will occur.
(Renumber subsequent definitions)

2. Federal Agencies

In addition to the State of Michigan, Monroe and Wayne counties, and the Province of Ontario, notification and support of federal agencies may be necessary in the event of a radiological emergency at Fermi 3. Responsibilities of affected federal agencies during an emergency at Fermi 3 (and Fermi 2) are established in the *National Response Framework (NRF), January 2008* (Ref. 14). The primary Federal Response Agencies include the following:

- U.S. Nuclear Regulatory Commission
- U.S. Department of Energy
- Department of Homeland Security/Federal Emergency Management Agency
- Environmental Protection Agency
- U.S. Coast Guard.

b. Concept of Operations

Detroit Edison's responsibilities during an emergency condition focus on taking actions to:

- Assess plant conditions.
- Classify emergency conditions.
- Notify the Detroit Edison Emergency Response Organization and affected agencies and individuals of emergency conditions.
- Make protective action recommendations.
- Provide communications and technical expertise to affected agencies.
- Provide support for offsite assessment and protective activities.
- Mitigate the consequences of adverse plant conditions by monitoring and controlling plant parameters.
- Request offsite support, as needed.
- Coordinate with affected agencies to provide accurate information to the public.
- Terminate emergency conditions.

All normal operations at Fermi 3 are conducted under the authority of the Shift Manager (SM) and directed from the Control Room. In the event of an abnormal condition, the Shift Manager directs the activities of the plant staff in performing initial assessment, corrective, and protective functions. Using approved operating and emergency procedures, including the EALs provided in ~~Appendix 3 of this Plan~~, the Shift Manager determines if an emergency condition exists and, if so, determines the proper emergency classification.

The Emergency Plan Implementing Procedure (EPIP), "Emergency Classification,"

D. Emergency Classification System

This section describes the emergency classification and emergency action level scheme used to determine the minimum response to an abnormal event at Fermi 3. Detroit Edison has developed a standard emergency classification and action level scheme, based on system and effluent parameters, on which affected State and local response organizations may rely for determining initial offsite response measures.

1. Classification System

The emergency classification system is based on the four emergency classes described in 10 CFR 50, Appendix E. The Emergency Plan provides for classification of emergencies into four (4) categories or conditions covering the postulated spectrum of emergency situations and include: Notification of Unusual Event (referred to as Unusual Event), Alert, Site Area Emergency, and General Emergency. Each classification is characterized by EALs or event Initiating Conditions (ICs) and address emergencies of increasing severity.

A general description and the purpose of each classification level are provided in Sections A through D. The actions required by the licensee and by the state and/or local offsite authorities are also given for each emergency class.

a. Unusual Event

Events are in ~~process~~ or have occurred that indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

progress

which

has been initiated.

The purpose of this classification is to bring the response personnel and offsite agencies to a state of readiness in the event of escalation to a more severe action level classification, and to provide for systematic handling of event information and related decision making.

Detroit Edison Actions:

1. Inform state and local offsite authorities of the nature of the unusual condition within 15 minutes following classification and notify the Nuclear Regulatory Commission (NRC) as soon as possible but within one hour.
2. Augment on-shift resources as needed
3. Assess and respond.
4. Escalate to a more severe class, if appropriate, or
5. Close out with verbal summary to offsite authorities.

State and/or Local Offsite Authority Actions:

1. Provide fire, ambulance, or security assistance, if requested.
2. Escalate to a more severe class, if appropriate.
3. Stand by until verbal closeout.

b. Alert

progress

Events are in ~~process~~ or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of ~~intentional malicious dedicated efforts of a hostile act~~. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

hostile action.

The purpose of this classification is to ensure that emergency personnel are readily available to respond if the situation becomes more serious or to perform confirmatory radiation monitoring if required, and provide offsite authorities with current status information.

Detroit Edison Actions:

1. Inform state and local authorities of Alert status and reason for Alert within 15 minutes following classification and to the NRC as soon as possible but within one hour.
2. Augment resources by activating the TSC, EOF, and OSC.
3. Assess and respond.
4. Mobilize and dispatch onsite monitoring teams with associated communication equipment if required.
5. Provide periodic plant status updates to offsite authorities.
6. Provide periodic meteorological assessments to offsite authorities and, if any releases of radioactive material as specified for an Alert in ~~Appendix 3~~ are occurring, provide dose estimates for those releases.
7. Escalate to a more severe class, if appropriate, or
8. Close out emergency class by verbal summary to offsite authorities.

EPIP, "Emergency Classification,"

State and/or Local Offsite Authority Actions:

1. Provide fire, ambulance, or security assistance, if required.

2. Augment resources and bring Emergency Operations Centers (EOCs) to standby.
3. Place key emergency personnel on standby status, including monitoring teams with associated communication equipment.
4. Provide confirmatory offsite radiation monitoring and ingestion pathway dose projections if actual releases substantially exceed Technical Specifications limits.
5. Escalate to a more severe class, if appropriate.
6. Maintain Alert status until verbal closeout or de-escalation of emergency class.

c. Site Area Emergency

progress

hostile action

Events are in ~~process~~ or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or ~~security events~~ that result in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

The purpose of the Site Area Emergency classification is to (1) assure that response centers are staffed; (2) assure that monitoring teams are dispatched; (3) provide consultation with offsite authorities, and (4) provide updates for the public through offsite authorities.

Detroit Edison Actions

1. Inform state and local offsite authorities of Site Area Emergency status and reason for emergency within 15 minutes following classification and to the NRC as soon as possible, but within one hour.
2. Augment resources by activating the TSC, OSC, EOF and JIC.
3. Assess and respond.
4. Dispatch onsite and offsite monitoring teams with associated communication equipment if required.
5. Provide regular plant status updates to offsite authorities and periodic press briefings with offsite authorities.
6. Make onsite senior technical and management staff available for consultation with NRC and state authorities on a periodic basis.

7. Provide meteorological data and dose estimates to offsite authorities for potential/actual releases as appropriate.
8. Provide release data and dose projections based on available plant condition information and foreseeable contingencies.
9. Escalate to General Emergency classification, if appropriate, or
10. Close out or de-escalate emergency classification by briefing offsite authorities.

State and/or Local Offsite Authority Actions:

1. Provide any assistance requested.
2. Provide public within 10-mile radius with periodic updates on emergency status.
3. Augment resources by activating EOCs.
4. Dispatch key emergency personnel, including monitoring teams with associated communications.
5. Alert other emergency personnel to standby status (for example, those needed for evacuation) and dispatch personnel to assigned near-site locations.
6. Provide offsite monitoring results to licensee and others, and jointly assess them.
7. Continuously assess information from licensee and offsite monitoring teams regarding changes to protective actions already initiated for public and mobilizing evacuation resources.
8. Consider placing milk animals within 2-mile radius on stored feed and assess need to extend distance.
9. Provide press briefings with licensee.
10. Escalate to General Emergency classification, if appropriate.
11. Maintain Site Area Emergency status until closeout or de-escalate of emergency class.

d. General Emergency

progress

hostile action

Events are in ~~process~~ or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or ~~security events~~ that result in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guidelines exposure levels offsite for more than the immediate area.

4. Augment resources by activating EOCs.
5. Dispatch key emergency personnel including monitoring teams with associated communications.
6. Dispatch other emergency personnel to duty stations within 5-mile radius and alert all others to standby status.
7. Provide offsite monitoring results to licensee and others, and jointly assess them.
8. Continuously assess information from licensee and offsite monitoring teams regarding changes to protective actions already initiated for public and mobilizing evacuation resources.
9. Consider placing milk animals within 10-mile radius on stored feed and assess need to extend distance.
10. Provide press briefings with Detroit Edison.
11. Maintain General Emergency status until closeout or de-escalation of emergency class.

2. Emergency Action Levels (EALs)

Emergency classifications are characterized by EALs which are consistent with the general class descriptions (~~and provided in NEI guidance documentation~~) in accordance with Regulatory Guide 1.101, "Emergency Planning and Preparedness for Nuclear Power Reactors". Where possible, these EALs will be related to plant instrumentation readings.

An emergency is classified after assessing abnormal plant conditions and comparing them to EAL Threshold Values for the appropriate Initiating Conditions (ICs). An Initiating Condition is one of a predetermined subset of unit conditions where either the potential exists for a radiological emergency, or such an emergency has occurred. Defined in this manner, an IC is an emergency condition, which sets it apart from the broad class of conditions that may or may not have the potential to escalate into a radiological emergency. Initiating Conditions are arranged in one of the Recognition Categories.

~~Appendix 3 provides Recognition Categories, the associated Initiating Condition Matrices, and the Emergency Action Levels. The Appendix also includes parameter values and equipment status that are indicative of each emergency class.~~

3. State/Local Emergency Action Level Scheme

Detroit Edison coordinates with the State of Michigan, for consistency between classification schemes. The coordination involves the state, county, and provincial authorities on an annual basis.

Fermi 3 EPIP, "Emergency Classification," provides the parameter values and equipment status that are indicative of each emergency class. Changes to this EPIP are developed and approved consistent with the requirements of 10 CFR 50.54(q) and the guidance provided in USNRC Regulatory Issue Summary (RIS) 2005-02.

I. Accident Assessment

This section describes the methods, systems, and equipment available for assessing and monitoring actual or potential offsite consequences of a radiological emergency.

1. Parameters Indicative of Emergency Conditions

The EPIP, "Emergency Classification,"

Plant system and effluent parameter values are utilized in the determination of accident severity and subsequent emergency classification, as described in Section D of this Plan. Environmental and meteorological events are also determining factors in emergency classification. Appendix 3 of this Plan identifies plant system and effluent parameter values that are indicative of off-normal or accident conditions and includes the various indications that correspond to the emergency initiating conditions based on the methodology provided in NEI 07-01, "Methodology for Development of Emergency Action Levels for Advanced Passive Light Water Reactors", Revision 0, March 2008. (Ref. 9).

In order to adequately assess the emergency condition, each emergency response facility has the necessary equipment and instrumentation installed to make available essential plant information on a continuous basis. Evaluation of plant conditions is accomplished through the monitoring of plant parameters both from indication in the Control Room and within the plant. Some of the more important plant parameters to be monitored in the Control Room are assembled into a single display location, which is called the SPDS. The SPDS monitors parameters relative to the plant design such as reactor coolant system pressure, containment pressure, reactor power, safety system status, containment radiation level, and effluent monitor readings. The instrumentation and equipment capabilities available for each emergency response facility are described in Section II.H.

The resources available to provide initial and continuing information for accident assessment throughout the course of an event include plant parameter display systems, liquid and gaseous sampling system, Area and Process Radiation Monitoring Systems, and Accident Radiation Monitoring Systems (which includes the high range containment radiation monitors). Descriptions of these systems are provided in Section II.H of this Plan.

2. Plant Monitoring Systems

Initial values and continuing assessment of plant conditions through the course of an emergency may rely on reactor coolant sample results, radiation and effluent monitors, in-plant iodine instrumentation, and containment radiation monitoring.

Appendix 4 of this Plan provides information regarding plant monitoring systems that are significant to continuing radiological assessment. Provisions are made for obtaining samples under accident conditions as discussed in the ESBWR Design Control Document.

References

A. Cited References

1. Code of Federal Regulations; Title 10, Part 20, "Standards for Protection Against Radiation".
2. Code of Federal Regulations; Title 10, Part 50, Section 47, "Emergency Plans".
3. Code of Federal Regulations; Title 10, Part 50, Appendix E, "Emergency Planning and Preparedness for Production and Utilization Facilities".
4. EPA 400-R-92-001, "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents", U.S. Environmental Protection Agency, May 1992.
5. FEMA REP 10, Guide for the Evaluation of Alert and Notification Systems for Nuclear Power Plants" November 1985
6. Fermi 3 Final Safety Analysis Report (FSAR)
7. Fermi 3 Nuclear Power Plant, "Development of Evacuation Time Estimates". KLD Associates, Inc. Revision 0, 2008.
8. GE-Hitachi Nuclear Energy, "ESBWR Design Control Document," Revision 4, September 2007.
9. ~~NEI 07-01, "Methodology for Development of Emergency Action Levels Advanced Passive Light Water Reactors", Revision 0, March 2008.~~ ← Not Used
10. NUREG-0654/FEMA-REP-1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants", November 1980, Revision 1.
11. NUREG-0696, "Functional Criteria for Emergency Response Facilities", Final Report, February 1981.
12. NUREG-0737, Supplement 1, "Requirements for Emergency Response Capability", December 1982.
13. NUREG-0728, "NRC Incident Response Plan" Revision 4, April 2005
14. U.S. Department of Homeland Security, "National Response Framework", January 2008.
15. NUREG/CR-6863, U.S. Nuclear Regulatory Commission, "Development of Evacuation Time Estimate Studies for Nuclear Power Plants," January 2005.
16. Michigan Emergency Management Plan, December 2005.
17. Technical Basis Document DAS/RADDOSE-V, "DAS/RADDOSE-V, Version 1.0, March 2002.

~~Appendix 3- Emergency Action Levels~~

← Not Used

↑
Note: Pages A3-2
through A3-107 are
deleted.

**Emergency Plan Implementing and Supporting Procedures
(Typical List) and Procedure Cross-Reference to Plan**

Implementing Procedures	Affected Sections of Plan
Emergency Classification	Section D, Appendix 3
Notifications/Communications	Sections E, F
Protective Action Recommendations	Section J
Dose Assessment Methodology	Section I, Appendix 4
Onsite/Offsite Radiological Monitoring	Section I
Core Damage Assessment	Section I
Radiological Exposure Control	Section K
Evacuation and Accountability	Section J, Appendix 5
Medical Response	Sections B, L
Recovery and Reentry	Section M
Technical Support Center Activation and Operation	Sections A, B, H
Operational Support Center Activation and Operation	Sections A, B, H
Emergency Operations Facility Activation and Operation	Sections A, B, H
Joint Information Center Activation and Operation	Sections B, G, H
Administrative Procedures	
Maintaining Emergency Preparedness	Section P
Emergency Response Facilities and Equipment	Sections B, H, I
Drills and Exercises	Section N
Radiological Emergency Response Training	Section O
Public Information	Section G
Emergency Preparedness Telephone Directory	Sections E, P

Planning Element	Fermi 3 Emergency Plan Section(s)	Comments
<p>Criteria D.2. <i>The initiating conditions shall include the example conditions found in Appendix I and all postulated accidents in the Final Safety Analysis Report (FSAR) for the nuclear facility.</i></p>	<p>II.D.2 Appendix 3, Emergency Action Levels and Initiating Conditions</p>	
<p>Criteria D.3. <i>Each State and local organization shall establish an emergency classification and emergency action level scheme consistent with that established by the facility licensee.</i></p>	<p>II.D.3</p>	<p>Offsite Responsibility</p>
<p>Criteria D.4. <i>Each State and local organization should have procedures in place that provide for emergency actions to be taken which are consistent with the emergency actions recommended by the nuclear facility licensee, taking into account local off-site conditions that exist at the time of the emergency.</i></p>	<p>II.D.4</p>	<p>Offsite Responsibility</p>
<p>Section E: Notification Methods and Procedures <i>Procedures have been established for notification, by the licensee of State and local response organizations and for notification of emergency personnel by all response organizations; the content of initial and follow-up messages to response organizations and the public has been established; and means to provide early notification and clear instruction to the populace within the plume exposure pathway Emergency Planning Zone have been established.</i></p>		

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next appropriate update of the Fermi 3 COLA. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

Part 10, Section 2.3 Emergency Planning ITAAC, Table 2.3-1
(Following 1 page)

**Table 2.3-1
ITAAC For Emergency Planning**

Planning Standard	EP Program Elements	Inspections, Tests, Analyses	Acceptance Criteria
1.0 Emergency Classification System			
<p>10 CFR 50.47(b)(4) – A standard emergency classification and action level scheme, the bases of which include facility system and effluent parameters, is in use by the nuclear facility licensee, and State and local response plans call for reliance on information provided by facility licensees for determinations of minimum initial offsite response measures.</p>	<p>1.1 A standard emergency classification and emergency action level (EAL) scheme exists, and identifies facility system and effluent parameters constituting the bases for the classification scheme. [D.1**]</p> <p>[**D.1 corresponds to NUREG-0654/FEMA-REP-1 evaluation criteria.]</p> <p><u>ITAAC element addressed in:</u> COL EP II.D.1, Appendix 3</p>	<p>1.1 An inspection of the control room, technical support center (TSC), and emergency operations facility (EOF) will be performed to verify that they have displays for retrieving facility system and effluent parameters identified in the following list of EALs (Reference Appendix 3, Part 5, Emergency Plan) ←</p> <p>Abnormal Rad Levels/Radiological Effluents: AU1, (EALs 1,2), AU2, AA1 (EALs 1, 2), AA2, AA3, AS1 (EALs 1), AG1 (EAL 1) —</p> <p>Cold Shutdown Refueling System Malfunction: CU1, CU2, CU3, CU4, CU7, CU8, CA1, CA4, CS1, CG2</p> <p>Fission Product Barrier Thresholds:</p> <p>Fuel Clad Barrier Threshold Values:</p> <p>1. Reactor Vessel Water Level.</p> <p>2. Primary Containment Radiation Monitoring.</p> <p>3. Other Indications.</p> <p>RCS Barrier Threshold Values:</p> <p>1. Primary Containment Pressure</p> <p>2. Reactor Vessel Water Level</p> <p>3. RCS Leak Rate</p> <p>4. Primary Containment Radiation Monitoring.</p> <p>Containment Barrier Threshold Values:</p> <p>1. Primary Containment Conditions</p> <p>2. Primary Containment Isolation Failure or Bypass</p> <p>3. Primary Containment Radiation Monitoring</p> <p>Hazards or Other Conditions Affecting Plant Safety:</p> <p>HU1 (EAL 2), HA1 (EALs 1,2)</p> <p>System Malfunction: SU1, SU4 (EAL 1), SU8, SA1, SA2, SA4, SS1, SS2, SS3, SS6, SG1, SG2</p>	<p>1.1.1 A report exists that confirms the specific parameters identified in the EALs listed in ITA Section 1.1 have been retrieved and displayed in the control room, TSC, and EOF.</p> <p>1.1.2 A report exists that confirms the ranges available in the control room, TSC, and EOF encompasses the values for the specific parameters identified in the EALs listed in ITA Section 1.1.</p> <div data-bbox="1352 695 1906 855" style="border: 1px solid black; padding: 5px; margin-top: 20px;"> <p>that constitute the bases for the classification scheme in Emergency Plan Implementing Procedure, "Emergency Classification."</p> </div>

**Attachment 8
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3312)**

RAI Question No. 01-1

NRC RAI 01-1

Section 302(b)(1)(B) of the Nuclear Waste Policy Act of 1982, as amended, states "The Commission, as it deems necessary or appropriate, may require as a precondition to the issuance or renewal of a license under section 103 or 104 of the Atomic Energy Act of 1954 (42 U.S.C. 2133, 2134) that the applicant for such license shall have entered into an agreement with the Secretary for the disposal of high-level radioactive waste and spent nuclear fuel that may result from the use of such license."

Please identify the DOE contract number applicable to Fermi 3 for disposal of high-level radioactive waste and spent nuclear fuel or provide Detroit Edison's plans, including the time frame, for entering into such a contract.

Response

Detroit Edison has discussed the signing of a new Standard Contract with a contracting officer from the U.S. Department of Energy Office of Civilian Radioactive Waste Management. Detroit Edison intends to enter into an amendment to the Standard Contract for disposal of Spent Nuclear Fuel and/or High Level Radioactive Waste at Fermi 3 as soon as enough plant-specific data is available to execute the contract documents. Detroit Edison expects to execute the contract documents by July 1, 2010.

Proposed COLA Revision

None

**Attachment 9
NRC3-09-0025**

**Response to RAI Letter No. 9
(eRAI Tracking No. 3312)**

RAI Question No. 01-2

NRC RAI 01-2

The purpose of this RAI is to 1) determine if the proposed standard license conditions for 10 CFR Part 30, 40, and 70 are appropriate for the Fermi 3 COL application and 2) request additional information in the application to address program elements to ensure that Detroit Edison will have in place the necessary controls to allow receipt of byproduct and source material prior to the 10 CFR 52.103(g) finding.

In the Fermi 3 COL application transmittal letter, dated September 18, 2008, and in Part 1, General and Administrative Information, of the application, Detroit Edison requested such other licenses as would be required for receipt, possession and use of source, byproduct and special nuclear material in connection with the operation of Unit 3. The staff notes that such licenses would be in accordance with Commission regulations in 10 CFR Parts 30, 40, and 70.

In a memorandum (ML083030065) dated December 9, 2008, the staff proposed the following standard license conditions and requirements for COLs regarding 10 CFR Parts 30, 40, and 70:

- (1) (i) Pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, described in the final safety analysis report (FSAR), as supplemented and amended;*
- (ii) Pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after the finding in Section 2.D (1) of this license has been made, in accordance with the limitations for storage and amounts required for reactor operation, and described in the FSAR, as supplemented and amended;*
- (2) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, at any time, any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;*
- (3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use in amounts as required, any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and*
- (4) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.*

Please discuss whether the above proposed standard license conditions and requirements are considered appropriate to support the Fermi 3 COL application.

In addition, please discuss which parts of the application provide sufficient information to support compliance with the applicable portions of 10 CFR Part 30 and 40, and provide additional information as needed. For example, describe how you have addressed in the application the radiation protection program, security and fire protection program elements that will be in place prior to receipt of the byproduct or source material authorized by the proposed license conditions and requirements above. Note that the staff believes that its current review of the Fermi 3 COL application will identify the necessary controls regarding the receipt of new fuel on site in accordance with 10 CFR Part 70.

Response

The proposed license conditions described in the RAI are considered appropriate to support the Detroit Edison Fermi 3 COL.

The Detroit Edison Fermi 3 FSAR (which includes the incorporated by reference ESBWR DCD) Chapter 11, *Radioactive Waste Management*, Chapter 12, *Radiation Protection*, and Chapter 13, *Conduct of Operations* provide sufficient information to support compliance with the applicable portions of 10 CFR Parts 30 and 40. The license application information requested in these parts relates to byproduct, source, and special nuclear material and its purposes, radiation safety personnel, personnel training, facilities and equipment, radiation safety program, and waste management. Specifically:

- Information related to radiation sources containing byproduct, source, and special nuclear material, including their purposes and storage is provided in FSAR/DCD Section 12.2. This section also addresses procedures specifically related to such sources.
- Information related to the organizational structure of the applicant, including those responsible for source, byproduct and special nuclear material radiation safety, is provided in FSAR Sections 12.5 and 13.1.
- Information related to training of personnel, including those responsible for source, byproduct and special nuclear material radiation safety, is provided in FSAR Sections 12.5 and 13.2.
- Information related to radiation protection facilities and equipment, is provided in Section FSAR 12.5.
- Information related to the radiation safety program, is provided in FSAR/DCD Sections 11.5, 12.1 and 12.3, and 12.5.
- Information related to the fire protection program, is provided in FSAR Section 9.5.1.

- Information related to the relevant waste management processes, is provided in FSAR/DCD Section 11.4.
- Information related to plant procedures, including those used to control source, byproduct and special nuclear material, is provided in FSAR Sections 12.5 and 13.5.
- Information related to security, including safeguards of source, byproduct and special nuclear material, is provided in FSAR/DCD Section 13.6.

FSAR Table 13.4-201 provides milestones for various operational programs to be implemented. Important milestone dates for various operational programs that support issuance of the license and requirements relative to 10 CFR Parts 30, 40, and 70 include the following:

- Radiation Protection Program (including ALARA principles) — prior to initial receipt of byproduct, source, or special nuclear materials (excluding exempt quantities as described in 10 CFR 30.18)
- Fire Protection Program — prior to receipt of fuel onsite
- Security Program including physical security, safeguards contingency programs, training and qualification program — prior to receipt of fuel onsite

Proposed COLA Revision

COLA Part 2, FSAR Table 13.4-201, items 8, 11, 14, and 15 (Fire Protection, Non-Licensed Plant Staff Training, Emergency Planning, and Security) will be revised by adding the following new milestone:

(Portions applicable to SNM)	10 CFR 30.32	Prior to initial	10 CFR 30.32(a)
	10 CFR 40.31	receipt of byproduct	10 CFR 40.31(a)
		source or special	
		nuclear materials	
		(Excluding Exempt Quantities as described	
		in 10 CFR 30.18)	

A markup is attached.

Markup of Detroit Edison COLA

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

(Following 8 pages)

Table 13.4-201 Operational Programs Required by NRC Regulations (Sheet 2 of 7)

[STD COL 13.4-1-A] [STD COL 13.4-2-A]

Item	Program Title	Program Source (Required by)	Section	Implementation	
				Milestone	Requirement
7.	Containment Leakage Rate Testing Program	10 CFR 50.54(o) 10 CFR 50, Appendix J	6.2.6	Prior to fuel load	10 CFR 50, Appendix J Option B – Section III.a [COM 13.4-004]
8.	Fire Protection Program	10 CFR 50.48	9.5.1.15	Prior to fuel receipt for elements of the Fire Protection Program necessary to support receipt and storage of fuel onsite. Prior to fuel load for elements of the Fire Protection Program necessary to support fuel load and plant operation.	License Condition [COM 13.4-005] [COM 13.4-006]
9.	Process and Effluent Monitoring and Sampling Program:				
	Radiological Effluent	10 CFR 20.1301 and 20.1302	11.5.4.6	Prior to fuel load	License Condition [COM 13.4-007]
	Technical Specifications/Standard	10 CFR 50.34a 10 CFR 50.36a			
	Radiological Effluent Controls	10 CFR 50, Appendix I, Section II and IV			
	Offsite Dose Calculation Manual	Same as above	11.5.4.5 11.5.4.8	Prior to fuel load	License Condition [COM 13.4-009]
	Radiological Environmental Monitoring Program	Same as above	11.5.4.5	Prior to fuel load	License Condition [COM 13.4-010]

Add insert "A" here →

Insert A

(portions applicable to SNM)

10 CFR 30.32
10 CFR 40.31

Prior to initial
receipt of byproduct
source, or special
nuclear materials
(excluding Exempt
Quantities as
described in
10 CFR 30.18)

10 CFR 30.32(a)
10 CFR 40.31(a)
[COM 13.4-027]

Table 13.4-201 Operational Programs Required by NRC Regulations (Sheet 3 of 7)

[STD COL 13.4-1-A] [STD COL 13.4-2-A]

Item	Program Title	Program Source (Required by)	Section	Implementation	
				Milestone	Requirement
	Process Control Program	10 CFR 20.1301 and 20.1302 10 CFR 50.34a 10 CFR 61.55 and 61.56 10 CFR 71	11.4.2.3	Prior to fuel load	License Condition [COM 13.4-011]
10.	Radiation Protection Program	10 CFR 20.1101	12.5	Prior to initial receipt of by-product, source, or special nuclear materials (excluding Exempt Quantities as described in 10 CFR 30.18) for those elements of the Radiation Protection (RP) Program necessary to support such receipt	License Condition [COM 13.4-012]
				Prior to fuel receipt for those elements of the RP Program necessary to support receipt and storage of fuel onsite	[COM 13.4-013]
				Prior to fuel load for those elements of the RP Program necessary to support fuel load and plant operation	[COM 13.4-014]
				Prior to first shipment of radioactive waste for those elements of the RP Program necessary to support shipment of radioactive waste	[COM 13.4-015]
11.	Non Licensed Plant Staff Training Program	10 CFR 50.120	13.2.2	18 months prior to scheduled fuel load	10 CFR 50.120(b)

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"B" here →

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(portions applicable to SNM)

10 CFR 30.32
10 CFR 40.31

Prior to initial
receipt of byproduct
source, or special
nuclear materials
(excluding Exempt
Quantities as
described in
10 CFR 30.18)

10 CFR 30.32(a)
10 CFR 40.31(a)
[COM 13.4-028]

Table 13.4-201 Operational Programs Required by NRC Regulations (Sheet 4 of 7)

[STD COL 13.4-1-A] [STD COL 13.4-2-A]

Item	Program Title	Program Source (Required by)	Section	Implementation	
				Milestone	Requirement
12.	Reactor Operator Training Program	10 CFR 55.13 10 CFR 55.31 10 CFR 55.41 10 CFR 55.43 10 CFR 55.45	13.2.1	18 months prior to scheduled fuel load	License Condition [COM 13.4-016]
13.	Reactor Operator Requalification Program	10 CFR 50.34(b) 10 CFR 50.54(i) 10 CFR 55.59	13.2	Within 3 months after issuance of an operating license or the date the Commission makes the finding under 10 CFR 52.103(g)	10 CFR 50.54(i-1)
14.	Emergency Planning	10 CFR 50.47 10 CFR 50, Appendix E	13.3	Full participation exercise conducted within 2 years prior to scheduled date for initial loading of fuel Onsite exercise conducted within 1 year prior to the schedule date for initial loading of fuel Applicant's detailed implementing procedures for its emergency plan submitted at least 180 days prior to scheduled date for initial loading of fuel	10 CFR Part 50, Appendix E, Section IV.F.2.a(ii) 10 CFR 50, Appendix E, Section IV.F.2.a(ii) 10 CFR 50, Appendix E, Section V

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(portions applicable to SNM)

10 CFR 30.32
10 CFR 40.31

Prior to initial
receipt of byproduct
source, or special
nuclear materials
(excluding Exempt
Quantities as
described in
10 CFR 30.18)

10 CFR 30.32(a)
10 CFR 40.31(a)
[COM 13.4-029]

Table 13.4-201 Operational Programs Required by NRC Regulations (Sheet 5 of 7)

[STD COL 13.4-1-A] [STD COL 13.4-2-A]

Item	Program Title	Program Source (Required by)	Section	Implementation	
				Milestone	Requirement
15.	Security Program:	10 CFR 50.34(c)	13.6	Prior to fuel receipt	License Condition [COM 13.4-017]
	Physical Security Program	10 CFR 73.55			
		10 CFR 73.56			
		10 CFR 73.57			
	Safeguards Contingency Program	10 CFR 50.34(d) 10 CFR 73, Appendix C			
	Training and Qualification Program	10 CFR 73, Appendix B			
	Fitness for Duty (Construction – Mgt & Oversight personnel)	10 CFR 26, Subparts A-H, N, and O			
16.	Fitness for Duty (Construction – Workers & First Line Supv.)	10 CFR 26 Subpart K	13.7	Prior to on-site construction of safety- or security-related SSCs	License Condition [COM 13.4-018]
	Fitness for Duty (Operation)	10 CFR 26			
	Quality Assurance Program – Operation	10 CFR 50.54(a) 10 CFR 50, Appendix A (GDC 1) 10 CFR 50, Appendix B			
17.	Maintenance Rule	10 CFR 50.65	17.6	Prior to fuel load authorization per 10 CFR 52.103(g)	10 CFR 50.65(a)(1) [COM 13.4-008]

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(portions applicable to SNM)

10 CFR 30.32
10 CFR 40.31

13.6

Prior to initial
receipt of byproduct
source, or special
nuclear materials
(excluding Exempt
Quantities as
described in
10 CFR 30.18)

10 CFR 30.32(a)
10 CFR 40.31(a)
[COM 13.4-030]