

**From:** Lori Davis <davislj@dteenergy.com>  
**To:** <dgeis@nrc.gov>, <swb@nrc.gov>, <elk1@nrc.gov>  
**Date:** 12/28/01 6:59AM  
**Subject:** Comments on Draft Supplement to GEIS on Decommissioning

11/9/01

66 FR 45721

(9)

Good morning.

Please find attached a letter on "Comments on Draft Supplement to GEIS on Decommissioning" (Fermi letter NRC-01-0087, dated December 28, 2001).

Should you have any questions or comments, please advise Ms. Lynne S. Goodman, Manager, Fermi 1 (Detroit Edison), at 1-734-586-1205. (Should you have any problems with the document transmittal, please advise the sender.)

Thank you.

**CC:** Lynne S Goodman <goodmanl@dteenergy.com>

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Chief, Rules and Directives Branch  
Division of Administrative Services  
Mailstop T6D59  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Reference: 1.) Draft NUREG-0586, Sup 1, "Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities, Draft Supplement Dealing with Decommissioning of Nuclear Power Reactors", dated October 2001

Subject: Comments on Draft Supplement to GEIS on Decommissioning

Detroit Edison appreciates the opportunity to comment on Reference 1.

Overall, Detroit Edison agrees with the conclusions in the draft NUREG-0586, Sup 1. The supplement will be helpful and updates the previous Generic Environmental Impact Statement (GEIS) on Decommissioning to accommodate changes in regulations and experience gained in recent decommissioning activities. Detroit Edison does have specific comments on details in the document. The attachment to this letter details the comments. None of the comments should affect the overall conclusions in the supplement to GEIS.

If there are any questions on these comments, please contact Ms. Lynne Goodman at 734-586-1205.

Sincerely,

/s/

W. T. O'Connor, Jr.

Vice President, Nuclear Generation

WTO/LSG/ljd  
Attachment  
cc: S. W. Brown  
E. Kulzer (NRC Region III)

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D. Minaar (State of Michigan)  
Regional Administrator, Region III  
NRC Resident Office

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Specific Comments on NUREG-0586, Sup 1:

Abstract, p iii, lines 16-17 – add “explicitly” before “consider” in the 5<sup>th</sup> sentence. The original GEIS did not explicitly cover reactors except BWRs and PWRs. However, other reactors were not explicitly listed in what was not covered by the GEIS. Also, other reactors were listed in the table of decommissioning reactors in the original GEIS. They have been considered covered for activities described in the GEIS.

Executive Summary, p xi, 3<sup>rd</sup> paragraph, 4<sup>th</sup> sentence, lines 31-32 – change to “It does not include research and test reactors or the decommissioning of reactors that were permanently shutdown as a result of an accident.” This change provides consistency with the report and does not imply exclusion of all reactors that have been involved in an accident at some time during their operating history.

Section 3.1, p 3-2, line 21 – the LaCrosse Boiling Water Reactor site is smaller than San Onofre. McGuire Nuclear Station has two operating reactors rather than three.

Section 3.1.1, p 3-2, line 39 and 3-3, line 1 – Fermi 1 is in the final phase (decontamination and dismantling) of SAFSTOR.

Section 3.1.1.3, p 3-4, lines 10-14 – delete 2<sup>nd</sup> sentence and modify 3<sup>rd</sup> sentence. The Fermi 1 FBR used uranium as its fuel. The information on uranium capturing neutrons to produce plutonium is correct. Breeding rates are dependent on the FBR’s specific design.

Section 3.1.1.3, p 3-5, line 1– add “commercial” before “FBR”. The final decision on whether to permanently shutdown the FFTF, a DOE FBR, has not yet been announced.

Section 3.1.2, p 3-6, lines 18-19 – The Fermi 1 Reactor Building is a steel domed structure. Below ground, there is considerable concrete shielding, but the building is not reinforced concrete.

Section 3.1.3, p 3-8, line 32 – add “The systems described are typical and may differ at specific facilities.” to end of the 1<sup>st</sup> paragraph.

Section 3.1.3, p 3-10, line 7 – add “or similar document” following “(ODCM)”, since limits may be in Technical Specifications rather than an ODCM. Also, the description of effluent systems should include mention of an evaporator, since some facilities use evaporation to convert liquid waste to gaseous and monitor their discharge.

Section 3.1.3, p 3-13, last paragraph – shipment of contaminated apparatus or hardware may also occur to support specific activities.

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Section 3.1.3, p 3-14, lines 5-6 – shipment may also occur on barges or other ships.  
Section 3.2, p 3-16, lines 18-24 – the definition of SAFSTOR should more clearly define that it includes the final decontamination of the facility. This would be more consistent with definitions used elsewhere, such as in the original GEIS.

Table 3-2, p 3-27 – add footnote “c” to Fermi 1. Detroit Edison informed the NRC in late 2001 per the requirements of 10 CFR 50.82, that the final decontamination and dismantling phase of SAFSTOR would be started for Fermi 1.

Section 3.3.3, p 3-29 – sentences are duplicated between the three full paragraphs on p 3-29.

Section 4.3.3.3, p 4-12, line 16 – there appears to be a discontinuity between the previous paragraph and the paragraph starting on line 16. Is something missing?

Section 4.3.3.3, p 4-12, line 23 – pH would not necessarily (normally) be measured per the LTP. Also, while considerable attention is placed on minimizing spills during decommissioning, hazardous spills have occurred at decommissioning sites. The same types of activities as performed at operating units, which have resulted in spills at operating units, can lead to spills at decommissioning units. The likelihood is less since less water treatment and so less bulk chemical handling is typically performed at decommissioning sites.

Section 4.3.3.3, p 4-12, lines 28-30 – add “The processing of residual sodium products from an FBR is no more likely to result in water quality impact than decommissioning activities at a LWR.”

Section 4.3.4.2, p 4-14, lines 11-24 – not all decommissioning sites have or will have building ventilation systems, especially those that are in SAFSTOR for many years. Temporary systems will be established, as needed, for gaseous and particulate effluents during decommissioning if installed systems are no longer functional.

Monitoring of air quality is not necessarily performed during the storage period, depending on activities, storage period and source term.

Section 4.3.4.3, p 4-15 – other activities during decommissioning could result in release of particulate matter. This includes temporary suspension of particles during cutting activities and production of particulates from processing of sodium and NaK at an FBR. Such particulate matter is filtered, as necessary, prior to release, to avoid or minimize adverse air quality impacts. While this is recognized on p 4-14, it should also be included in the section on “Results of Evaluation”.

Section 4.3.4.4, p 4-16, line 11 – add the following sentence to the end of the paragraph: “Particulates produced by decommissioning activities within buildings will be filtered as

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needed so that air quality impacts will be minimal.”

Section 4.3.9.2, p 4-34 – it is not clear whether the physical injuries discussed in this section are only those due to radiological impacts or due to non-radiological aspects of an accident. The section is on radiological accidents so the former is implied, but the wording is not clear.

Section 4.3.9.3, p 4-35, lines 19-21 – the category of hazardous (non-radiological) chemical related accidents is listed here, which is appropriate since such accidents are possible during decommissioning. The description only mentions potential for injury to the public. However, in Section 4.3.9.2, which describes the classification of accidents as small, moderate and large, effects on workers are also discussed. This should be clarified since it appears to be inconsistent.

Section 4.3.10.1, p 4-37 – the hazard of flames and fires should be addressed in the section on physical hazards.

Section 4.3.10.1, p 4-39 – the following items should be added to the list of activities that expose workers to chemical hazards:

- ♦ Removal of chemical containing systems, such as demineralizers, and acid and caustic containing tanks
- ♦ Removal of sodium and NaK residues

Section 4.3.10.2, p 4-40, lines 12-14 – in the paragraph on FBR decommissioning activities, add that decommissioning a FBR involves removal of sodium and NaK, but that these decommissioning activities can be performed safely with the proper engineering controls.

Section 4.3.11.1, p 4-41, line 7 – add “LWR” before “licensee” in the third sentence. The formula for the specified minimum amount of decommissioning funds applies to LWR’s. The other regulations on decommissioning funds and evaluation of adequacy do apply to all reactors, so there is no adverse impact of the formula applying only to LWR’s.

Section 4.3.11.3, p 4-45, lines 4-5 – delete or reword “and is either undergoing decommissioning or is in safe storage awaiting decommissioning” from the second sentence. SAFSTOR or safe storage is a form of decommissioning.

Tables 4-6 and 4-7, p 4-71 – footnote “d” is not used in the tables, but probably belongs next to the 960 value for the number of shipments from a PWR using SAFSTOR.

Section 4.3.18.2, p 4-72, lines 38-41 – other irretrievable resources include gases and tools, but these resources are also minor.

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Section 6.1, p 6-1 – for plants shutdown before existing decommissioning rules were adopted, the environmental reviews may not be in the PSDAR as discussed in this section. In such cases environmental aspects not previously addressed that need to be addressed will be covered in the LTP.

Tables E-3 and E-5

The issue of occupational hazards applies to activities in addition to those indicated in Table E-3. Since Table E-5 is based on Table E-3, it also needs to be revised to reflect the following.

Such additional activities that can affect or involve occupational issues are as follows. A brief explanation of why follows each item.

Adjust site training (Industrial safety type training needs to be continued and revised based on job hazards to ensure workers are trained for activities or areas [e.g. confined spaces] involved in decommissioning)

Establish a reactor coolant system vent pathway (Depending on specific method, this could involve cutting, welding and working at heights)

Establish containment vent pathway (Depending on specific method, this could involve cutting, welding and working at heights)

Do preventive and corrective maintenance on SSCs (Maintenance activities at an operating plant or decommissioning plant can involve industrial hazards, some more so than others. There can be energized systems, pressurized fluids, rotating equipment, etc.)

Chemical decontamination (Occupational hazards include chemicals and pressurized fluids)

High pressure water sprays of surface (High pressure sprays are themselves a hazard due to energy involved. Precautions need to be taken to use them safely)

Cut out radioactive piping (Cutting typically involves torches or cutting wheels, creation of fumes or particles, and rigging)

Remove large and small tanks or other radioactive components from the facility (Careful rigging is needed to maintain control and prevent injury. If this activity also involves cutting the equipment free, the hazards of cutting are also involved)

LLW packaging and storage (Handling the LLW and packages needs to be performed

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ergonomically safe to prevent injuries)

Large component transportation (The transportation issues all involve lifting of materials to remove them or bring them onto the site. Care also is needed if vehicle is backing up during the evolution.)

LLW transportation

Equipment into site transportation

Backfill tracked into site

Non-radioactive waste transportation

Complete final radiation survey (The survey will involve working at heights if buildings remain, and possibly accessing hard to reach locations.)

Table F-1

The site area for Fermi 1 is listed as 1,120 acres. That is the size of the Fermi 2 site; Fermi 1 is on a portion of that site. The original Fermi 1 site was 900 acres. Currently, the portion of the site considered to be the Fermi 1 nuclear facility on the Fermi 2 site is less than 4 acres.

Fermi 1's cooling water source was Lake Erie. Saxton's area is listed as 1.1 acres, however, the text reported San Onofre as having the smallest site. Also, footnote "b" should be applied to the "Cooling System" header, rather than "Cooling Water Source."

Table F-2, p F-4 – Fermi is in Michigan, not Ohio.

Section G.1.1.4.1, p G-5 – delete or revise fourth bullet. Conditions typically encountered in exposures from normal facility operations result in external dose, rather than internal dose. Internal deposition of particles can occur, but this is less common than external dose. Also, clarify last bullet.

Section G 1.1.4.3, p G-8, lines 13-22 – this somewhat explains selection of the occupational nominal probability coefficient in Table G-4 for fatal cancers, but does not explain selection of hereditary coefficient.

Table G-6, p G-11 – the table per its title covers dose limits for an individual member of the public under 10 CFR 20. The ALARA air emission dose constraint listed in the table is not a 10 CFR 20 limit.

Section G.2.1, p G-13, lines 26-45 – the conclusion in the first sentence of the third paragraph



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is misleading. The main reason that the occupational doses at reactors undergoing decommissioning are a small fraction of dose accumulated at operating facilities, as shown in Table G-9, is that there are many more operating plants than decommissioning plants. The average for decommissioning plants shown in the table is less than the operating plant, but not only a small fraction.

It also is not clear how, why, and how many plants were selected for Tables G-11 and G-12. Additionally, the first sentence of the fourth paragraph should indicate that the data is estimated worker dose for major types of decommissioning activities. Actual data appeared to be listed for only one plant in the tables.

Table G-12, p G-17 – the two numbers listed for San Onofre should be explained.

Section G.2.1, p G-13 & G-19 – the conclusion reached that the doses for SAFSTOR and DECON are not substantially different is partly due to which decommissioning plants were selected to be evaluated.

Table G-14 it appears strange that only 26-34 operating plants were listed as reporting dose from gaseous effluents each year, since all plants are required to report. Also, the selection of the years 1985-1987 appears strange for an update report.

Section G.2.2, p G-21 – while the conclusion appears correct, it is strange that information was only available for a small sample of facilities. This data is reported to the NRC annually by licensees.

Table G-15 – the basis of this table should be better explained. How were the plants selected? What years are covered?

Table G-16 – how were the plants listed in this table selected? It appears to be a strange non-representative sample.

Tables H-1 and H-2 – as addressed under comments on Tables E-3 and E-5, other activities involve occupational hazards.

Occupational issues do not seem to belong as an environment issue category. Safety of workers is considered as a separate category when planning work. From a regulatory perspective, OSHA and state agencies typically promulgate regulation on worker safety, not the EPA or state environmental agencies. The environmental issues typically are impacts to the air, water, or land both on and off site, while other environmental issues that impact people are evaluated for the public. The type of review is also different for occupational issues than other environmental issues. As each work package is planned, the hazards of the job need to be addressed in the planning and appropriate methods, engineering controls and

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protective equipment planned and workers briefed for each activity. This is an immediate, short-term (for the duration of the activity) type of review, while most environmental issues have longer term implications.

However, if occupational issues are to be included in this environmental review, the additional activities discussed earlier also need to be included.

Tables E-3, E-5, H-1 and H-2 – some additional activities, for example, system dismantlement and large component removal, could potentially impact air quality. Provisions are needed for portions of these activities to prevent adverse impacts.

Table H-2, p H-17 – in the “Impact and Summary of Findings” section, “water use” should be changed to “air quality”.

Table I-5, p I-20 – add fire and hazardous materials to associated accidents for removal of contaminated pipe and tubing.

Table I-5, p I-21 – add fire and hazardous materials to associated accidents for metal component dismantlement, intact removal or partial segmentation of large components and the first three subcategories of removal of reactor pressure vessel and internals.

Table I-5, p I-22 – add fire to associated accidents for cut piping attachments. Add fire and hazardous materials to associated accidents for decontamination, segmentation and disposal of RCS and other larger bore piping.

Table I-5, p I-23 – add fire to associated accidents for deactivate systems, disposal of nonessential structures and systems; establish a permanent reactor coolant system vent path; establish a permanent containment vent path; remove dedicated safe-shutdown diesel and generator; and remove unused equipment during SAFSTOR. Add hazardous materials to deactivate systems; disposal of nonessential structures and systems; drain and flush plant systems; process, package, and ship liquid and solid radioactive wastes; remove dedicated safe-shutdown diesel and generator; dispose of non-radioactive hazardous waste; and limited decontamination of selected structures and systems.

In general, any activities that involve cutting or welding could lead to a fire. Precautions are implemented to minimize the possibility and respond quickly if a fire starts. Depending on the materials in the systems during operation or during earlier decommissioning activities, a hazardous materials accident is possible when removing systems, handling waste or using decontamination materials. Again, precautions are planned to minimize the possibility.

Section J.1.1, p J-1 – add, “selected” before “facilities” in the first sentence of the first paragraph. Identify the time period used for the comparison in the second paragraph.

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Table J-1 – add footnote “c” to Fermi 1.

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In conclusion, Detroit Edison thinks the draft supplement to the GEIS on decommissioning of nuclear facilities is a good effort and agrees with the overall conclusions. Some details should be revised to improve accuracy and to ensure planned decommissioning activities, intended to be covered by this supplement, are fully addressed. This will avoid future questions on whether activities are covered and/or bounded by this GEIS supplement.

**From:** DGEIS  
**To:** DaM2  
**Date:** 1/7/02 7:31AM  
**Subject:** Fwd: Comments on Draft Supplement to GEIS on Decommissioning

Detroit Edison Comments.