



Dated: August 28, 1981

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
GENERAL ELECTRIC COMPANY	)	
Consideration of Renewal	)	Docket 70-1308
of Materials License No.	)	72-1
SNM-1265 Issued to G.E.	)	
Morris Operation Spent	)	
Fuel Storage Installation	)	



STATEMENT OF MATERIAL FACTS AS TO WHICH  
THERE IS NO GENUINE ISSUE TO BE HEARD

This Statement sets forth those material facts about which General Electric Company ("General Electric") contends there is no genuine issue to be heard in this license renewal proceeding pursuant to 10 C.F.R. § 2.749(a). The facts are set forth in the order of the contentions admitted in this proceeding, to which they relate, and General Electric's basis for each fact is stated.

BACKGROUND

1. General Electric is a corporation organized under the laws of the State of New York with its executive offices in Fairfield, Connecticut. The headquarters for General Electric's Nuclear Energy Operations is in San Jose, California. General Electric owns and operates the Morris Operation. (Att. G. § 1.1.1; CSAR § 9.2.)1/

1/ Consolidated Safety Analysis Report for Morris Operation, NEDO-21326C, January 1979, hereafter referred to as "CSAR". Where applicable, Attachment G to applicant's amended application for license renewal under 10 C.F.R. Part 72, dated 1/12/81, and supplements, contains information superseding that in the CSAR. Attachment G is referred to hereafter as "Att. G."

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2. The Morris Operation is located in Grundy County, Illinois, about seven miles east of Morris, Illinois and approximately 65 miles southwest of Chicago, Illinois. (Att. G § 1.1.2.)

3. The site of the Morris Operation was selected because of its remoteness from large population centers, and to take advantage of geographic features contributing to the seismic, hydrological and meteorological safety of the facility. (Att. G § 3.9.)

4. On August 23, 1974, the Atomic Energy Commission issued a revised materials license No. SNM-1265, permitting General Electric to receive, possess, and store special nuclear materials at the Morris Operation and to transfer such materials to persons authorized to receive them. The license had an expiration date of August 31, 1979. (See License SNM-1265.)

5. On February 27, 1979, General Electric filed a timely application for a renewal of license SNM-1265. (Letter of 2/27/79 to R.E. Cunningham from D.M. Dawson.)

6. The Morris Operation has a capacity to store about 700 metric tons (heavy metal) of nuclear fuel. As of July 1, 1981, about 315 metric tons were in storage at the facility.<sup>2/</sup> (Operating Experience Report, ch. 1.)

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<sup>2/</sup> About one metric ton (8 bundles) of fuel from the LaCrosse Boiling Water Reactor was returned to LaCrosse in June, 1981, reducing the amount in storage reported in the Operating Experience Report, NEDO-209698, January, 1979, ch. 1.

7. For almost ten years, General Electric has demonstrated its ability to operate Morris Operation in a manner that controls occupational radiation exposures and concentrations of radioactive material in effluents to the requirements of 10 C.F.R. Part 20, under the philosophy of reducing exposure to as low as is reasonably achievable. (Op. Ex. Rpt. ch. 4 and 5.)<sup>3/</sup>

8. The conditions required for the release and dispersal of significant quantities of radioactive materials are not present during normal fuel storage operations or under design-basis accident conditions at Morris Operation. This is due to the low heat generation rate of spent fuel with more than one year of decay before storage, and the low inventory of volatile radioactive materials available for release to the environs. (Final Rule, 10 C.F.R. Part 72, preamble at page 5.)

Contention 1(a): Dresden/Morris Simultaneous Accidents

9. Studies have shown that the water basin storage of spent fuel presents an extremely low risk of serious release of radioactive material. (Generic Environmental Impact Statement on Handling and Storage of Spent Light Water Power Reactor Fuel, NUREG 0575, August, 1979, ch. 4.)

10. Any accident at Morris Operation, such as a fuel drop accident, would contribute an extremely low additional

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<sup>3/</sup> Operating Experience Report - Irradiated Fuel Storage at Morris Operation, NEDO-20969B including revisions through B4 of 9/80; hereafter referred to as "Op Exp. Rpt."

dose to that from a reactor accidental release. Of the credible accidents analyzed for Morris Operation, the maximum whole body dose for a person at the Morris site boundary would be less than 20 mRem whole body and less than 1 mRem thyroid. (CSAR § 8.7.2.1; SER § 7.5.)<sup>4/</sup>

11. No credible accidents have been postulated that would have consequences more severe than those analyzed in the CSAR. (Att. G ch. 8; SER § 7.9.)

12. No credible event which could occur at Dresden would challenge the ability of Morris Operation to store fuel safely. (Att. G § 8.1.2; SER § 7.8; Voiland Deposition, 89 et seq.)

Contention 1(b)(1): Tornado-impelled Missiles

13. The fuel storage basins are constructed of reinforced concrete poured against rock, are stainless steel-lined, and water-filled to a depth of 28.5 feet. Fuel is contained in either of two types of stainless steel "baskets" which hold, respectively, four (PWR) or nine (BWR) bundles in a square array for movement and storage. Baskets are latched in a mounting frame, providing about 14 feet of water over the top of the fuel bundles. (CSAR ch. 5.)

14. An extensive and conservative analysis of tornado effects and resultant missile development is included in the CSAR. (CSAR § 4.2.2.2.)

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<sup>4/</sup> Safety Evaluation Report, NUREG 0709, July 1981, hereafter referred to as "SER".

15. Analyses of the effects of credible tornado-impelled missiles, such as a segment of a telephone pole, or a small automobile, conclude that these missiles cannot penetrate even the basin liner, other than a minor puncture at a shallow depth, which would not seriously impair the basin's effectiveness as a containment. (CSAR § 8.4.)

16. Using conservative assumptions, an analysis of storage basin conditions concludes that credible tornado impelled missiles, such as a segment of a telephone pole, or a small automobile, could damage some fuel storage baskets or fuel bundles but would not result in the release of a significant amount of radioactive materials to the environment. (CSAR § 8.8; SER § 7.6.)

17. Even assuming that a missile penetrated the basin structure, entered the basin water and ruptured all fuel rods in six boiling water reactor fuel bundles or four pressurized water reactor fuel bundles, the whole body dose for a person at the site boundary would be less than 0.12% of the design basis accident dose limit specified in 10 C.F.R. § 72.68(b). (EIA for Morris Operation, NUREG-0695, June, 1980 at § 8.1.1; CSAR ch. 8; SER ch. 7.)

Contention 1(b): Loss of Coolant

18. The spent-fuel basin at Morris Operation contains approximately 680,000 gallons of water. (Commentary on Spent Fuel Storage at Morris, NUREG-0956, July, 1979, at 7.)

19. The Morris Operation maintains a makeup water supply at all times between 10,000 and 20,000 gallons.

Moreover, the Morris Operation has essentially an unlimited quantity of raw water from its site wells. Additionally, Morris Operation has a cooperative agreement with Dresden Nuclear Power Station to make available substantial amounts of demineralized water in case of emergency. (Voiland Affidavit at ¶3.)

20. The basin is constructed in low-porosity rock in an area where the natural hydrology forms a hydrostatic barrier against leakage below the top of the stored spent fuel. This barrier is a result of the low permeability of the rock which limits the flow of water in the rock to very low velocities. This results in the perched water level being higher than the top of the fuel. (Voiland Affidavit at ¶3; CSAR ch. 5.)

21. The fuel storage basin at Morris is equipped with two independent systems for indicating loss of basin water, the basin-water level system, which is sensitive to a drop in basin water depth of about two inches (a loss of about 4,000 gallons of water), and the leak detector system, which is sensitive to the accumulation of just 40 gallons. (Commentary on Spent Fuel Storage At Morris Operation, 9.)

22. The water collected in the leak detection system can be emptied into the Morris Operation's low activity waste vault. (Id.)

23. The basin cooling system is not critical to the safety of the fuel storage system; in the event of complete

failure of the cooling system, and with design maximum spent-fuel heat output, the water temperature would equilibrate (due to evaporation-cooling) at about 170° to 190°F depending upon atmospheric conditions and basin content.<sup>5/</sup> (Att. G § 5.5.3.2.)

24. There are no piping penetrations in the basin which, if opened, could drain the basins, and there are no potential paths in the extant piping for pumping or siphoning more than two feet of water from the basins. These provisions make it practically impossible - whether accidentally or intentionally - to drain basin water. (Att. G § 8.3.)

25. Other than damage to the basin enclosure (i.e., sheet metal walls and roofs), no accident has been identified that would cause a rift in the building structure. (CSAR ch. 8; SER § 7.4.)

26. All fuel stored at Morris Operation has been cooled for at least one year after discharge from the reactor core. (Att G § 4.1.1.)

Contention 1(b)(3): Earthquake

27. The Morris Operation has been designed and constructed to earthquake criteria of 10 C.F.R. Part 72. (CSAR § 4.2.4.; Att. G § 7.4.)

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<sup>5/</sup> In fact, the actual equilibrium temperature under presently existing circumstances would be less than 120°F because the fuel in storage has been subjected to substantially longer decay or lower reactor exposure than postulated in the CSAR analysis. (Voiland Affidavit, ¶6.)

Contention 1(b)(4): Sabotage

See paragraphs regarding Contention 2, below.

Contention 2: Sabotage

28. The CSAR includes extensive and conservative analyses of the effects of various mishaps on the Morris Operation, including those which could be produced by natural phenomena and accidents. These are considered regardless of cause, sabotage or otherwise. The effects of these mishaps would not be made significantly more severe by credible acts of sabotage. (CSAR ch. 4 and 8; Att. G.)

29. In particular, the separate sabotage analysis includes extensive and conservative consideration of mishaps peculiar to sabotage situations, including underwater explosions, removal of fuel from the basin, and interference with loaded casks. (Sabotage Analysis for Fuel Storage at Morris, NEDM-20682, November, 1974.)

30. Further, the separate Physical Security Plan includes planning to deter sabotage, and mitigate consequences of sabotage events. (Physical Security Plan, NEDS-14507, December, 1979; SER ch. 11.)

31. The fuel-handling at Morris is performed with a crane system that always uses rigid tools which make it incapable -- whether accidentally or intentionally -- of raising fuel out of basin water, or even above the specified minimum depth of 9 feet water cover. (CSAR ch. 5; SER § 4.1.1.)



32. More efficient explosives than those considered in General Electric's sabotage analysis could cause only a fractional change in the amount of radioactive material released in a sabotage attempt. (Voiland Affidavit, ¶4.)

Contentions 3(a) and (b):  
Whole-Body Exposure and Genetic Effects

33. Radiation exposure, including whole-body exposure of personnel at the Morris Operation, is well within the regulatory limit established in 10 C.F.R. Part 20. (Op. Exp. Rpt. ch. 4.)

34. There is no requirement in 10 C.F.R. Part 20 to project cumulative employee exposure for the term of the license. Genetic effects are not addressed in Part 20. (10 C.F.R. Part 20.)

Contention 3(c): Radiation Sources

35. The CSAR and documentation supporting the license renewal contain discussions of total radiation exposure to employees present at the Morris Operation irrespective of the source of the radiation. (CSAR ch. 7; Op. Exp. Rpt. ch. 4.)

Contention 3(d): Dry Storage

36. Neither disassembly, dry storage, nor compaction are permitted at the Morris Operation under the existing license or requested license renewal. (General Electric's Response to Board Question 1.)

Contention 3(e): Air Monitoring and Kr 85

37. The Morris Operation maintains fixed air-monitoring devices that continuously sample and measure airborne radioactive materials, and are equipped to alarm when predetermined concentrations are exceeded. (CSAR § 7.4 et seq.)

38. Material collected in the ventilation system filters at Morris is periodically subjected to radiometric analysis. (Id.)

39. Portable air samplers are regularly used to make spot checks of airborne radioactive materials. (Vciland Deposition at 37.)

40. Analysis in the CSAR establishes that the Morris Operation's releases of krypton-85 are well within applicable regulatory limits. (CSAR § 7.3.3.)

41. Environmental monitoring and other data obtained under Morris Operation radiological control and monitoring programs demonstrate that releases have been only a fraction of allowable limits. (Op. Exp. Rpt. ch. 4 and 5.)

Contention 4(a): Inflation

42. The estimated cost of decommissioning the Morris Operation is calculated in the CSAR in terms of 1978 dollars. (CSAR Appendix 7.)

43. The cost of decommissioning as estimated in the CSAR can be projected to any future date in a simple mathematical operation by application of standard escalation

factors. (See, e.g., "Assuring the Availability of Funds for Decommissioning Nuclear Facilities," Draft, NUREG-0584 Rev. 2, at 7; SER § 8.5.)

Contention 4(b): Financial Assurance

44. General Electric Company is committed to carry out the decommissioning of the Morris Operation in accordance with then applicable federal laws and regulations. (Letter of 4/15/80 to R.E. Cunningham from B. Wolfe, reproduced at CSAR Appendix 7, A. 7-15.)

45. The cost of decommissioning the Morris Operation, as calculated in the CSAR, is estimated to be about \$6,033,000 in 1978 dollars. (CSAR Appendix 7.)

46. Even assuming the most unfavorable conditions, the cost of decommissioning the Morris Operation is estimated at "somewhat under" \$58,000,000. (MHB Report.)

47. Even assuming this most unfavorable estimated decommissioning cost to be accurate, it amounts to less than one percent of General Electric's 1979 retained earnings account. (Moody's Investor's Service, 1980.)

48. General Electric's current resources and proven earning performance are significantly in excess of the estimated cost to operate the Morris facility and estimated decommissioning costs. These estimated costs will likely be increased by inflation over time as will the revenues and corporate resources of General Electric. (CSAR Appendix 7; SER § 8.2.)

Contention 4(c): Emergency Abandonment

49. There is no credible reason that the Morris Operation would ever have to be abandoned on an emergency basis. (Voiland Deposition at 89.)

50. Even if the Morris Operation had to be evacuated for extended periods, there would be no impact on its ability to store fuel safely. (Voiland Deposition at 90-91; Att. G ch. 8.)

Contention 4(d): Perpetual Care

51. Material from the LAW vault can be disposed of using existing technology at licensed waste burial facilities. (CSAR, Appendix 7; MHB Report.)

52. Technology exists to decontaminate vaults and related structures by acid etching and detergent scrubbing (CSAR Appendix 7; MHB Report.)

53. Perched water contamination would not occur in or after the decontamination process. (CSAR, Appendix B.10 and B.12; MHB Report.)

54. Pipes, pumps, filters, storage hardware and the like can be cut up, packaged and treated as low activity waste. (CSAR, Appendix 7; MHB Report.)

Contention 4(e): Complete Removal

55. Technology exists to completely remove from Morris Operation all licensed radioactive materials related to spent fuel storage. (Voiland Affidavit, ¶15.)

Contention 5(a): Unloading

56. Procedures exist for loading fuel from storage into shipping casks and transporting such fuel to a licensed receiver. These procedures were recently applied to a transfer of about one ton of fuel from Morris Operation to the LaCrosse Boiling Water Reactor. (CSAR ch. 1 and 5; Voiland Affidavit, ¶15.)

Contention 5(b): Transport

57. The General Electric Spent Fuel Services Operation Transportation Emergency Plan outlines procedures for response to radiological transportation emergencies involving General Electric property, or the property of those having cooperative agreements with General Electric, or where General Electric's assistance is requested. (Transportation Emergency Plan, NEDO-24785, September, 1980.)

Contention 5(c): Testing

58. General Electric's Radiological Emergency Plan outlines a program of testing and drills consistent with applicable regulations. ("Radiological Emergency Plan for Morris Operation," NEDE-21894, June 1975, as supplemented.)

Contention 6

This contention has been abandoned by the Intervenor.

Contention 7: Environmental Impact Statement

59. The license renewal sought by General Electric in this proceeding is only to continue without any change whatever the spent fuel receipt and storage operation which

it has conducted at Morris for almost ten years. (Answer to Board Question 1.)

60. Operation of the Morris Operation to date has had no measurable harmful effect on the environment. (Op. Exp. Rpt.; "Commentary on Spent Fuel Storage at Morris Operation".)

61. Continued operation of the Morris Operation is expected to have no impact on the environment which would justify issuance of an Environmental Impact Statement. (EIA for Morris Operation, NUREG-0695, June, 1980.)

Contention 8: Control Room

62. There are several access routes through the main building to the control room. (CSAR Appendix 14.)

63. The control room is not vital to safe operation of Morris Operation since the noncritical nature of all control systems and the slow development of emergency conditions permit the establishment of decentralized control. (Att. G § 5.5.5.4; CSAR ch. 5; SER § 3.12.)

64. Even if it should be necessary to evacuate the facility for some period, the safety of fuel in storage would not be compromised. (Att. G ch. 8; SER § 3.12; Voiland Affidavit, ¶6.)

Contention 9: Operator Training and Certification

65. General Electric has submitted to the NRC its plan for operator training and certification at Morris Operation consistent with 10 C.F.R. § 72.92; that regulation does not require the plan to include either minimum academic require-

ments or standards for tests and verification requirements.  
(See Appendix E to Motion for Summary Disposition; SER  
§ 8.3.2; Voiland Affidavit, ¶7.)

66. Morris Operation personnel and supervisors are trained, tested, certified and regularly retrained and recertified. (Voiland Affidavit, ¶7.)

Contention 10: Damaged Fuel

67. All fuel stored at Morris Operation has been cooled for at least one year after discharge from the reactor core consistent with 10 C.F.R. § 72.3(v). (Att. G § 4.1.1.)

68. The one-year decay stipulation provides assurance that no short-lived radionuclides are present, and the levels of volatile radioactive materials are very substantially reduced. (Preamble to Part 72, paragraph 7.)

69. There is no known damaged fuel presently in storage at Morris, and there is none expected to be stored in the future. (Voiland Deposition at 87; Voiland Affidavit, ¶8.)

70. The CSAR and proposed Technical Specifications do contain provisions for consideration of receipt and storage of damaged fuel, if these actions should become necessary. (CSAR ch. 5 and 7; Tech. Specs. § 4.7.)

71. Damaged spent fuel, which has been discharged from a reactor for more than one year, can be safely stored at Morris Operation without any adverse impact on the public health or safety or on the health or safety of personnel. (Voiland Affidavit, ¶8.)

Board Question No. 1(a): Activities Contemplated

72. The license renewal sought by General Electric in this proceeding is only to continue without any change whatever the spent fuel receipt and storage operation which has been conducted at Morris for almost ten years. (Answer to Board Question No. 1.)

73. No dry storage, fuel disassembly or compaction is allowed under the license as presently issued or as it would be renewed. (Id.)

Board Question No. 1(c): Changes, Tests and Experiments

74. General Electric will comply with 10 C.F.R. § 72.35. (Answer to Board Question No. 1 )

Respectfully submitted,  
GENERAL ELECTRIC COMPANY

By

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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GENERAL ELECTRIC COMPANY ) Docket No. 70-1308  
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Fuel Storage Installation )

CERTIFICATE OF SERVICE

The undersigned hereby certifies that he served the above and foregoing GENERAL ELECTRIC COMPANY's MOTION FOR SUMMARY DISPOSITION AND MEMORANDUM IN SUPPORT THEREOF, together with Appendices A through J thereto, STATEMENT OF MATERIAL FACTS AS TO WHICH THERE IS NO GENUINE ISSUE TO BE HEARD, and RESPONSE OF GENERAL ELECTRIC COMPANY TO BOARD QUESTION 1, in the above-captioned proceeding on the following persons by causing copies thereof to be deposited in the United States mail at 231 South LaSalle Street, Chicago, Illinois, in plainly addressed and sealed envelopes with proper first class postage attached before 5:00 P.M. on August 28, 1981:

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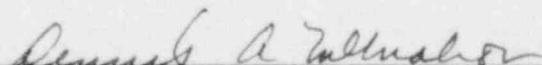
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