

GENERAL  ELECTRIC

GENERAL ELECTRIC COMPANY, 175 CURTNER AVE., SAN JOSE, CALIFORNIA 95125

Mail Code 861

NUCLEAR FUEL  
AND SERVICES  
DIVISION  
SPENT FUEL SERVICES OPERATION

DMD-558

Materials License No. SNM-1265

Docket No's. 70-1308  
72-1

June 23, 1981

Office of Nuclear Material Safety & Safeguards  
Attn: R.E. Cunningham, Director  
Division of Fuel Cycle & Material Safety  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

SUBJECT: RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION re  
QUALITY ASSURANCE CODES AND STANDARDS

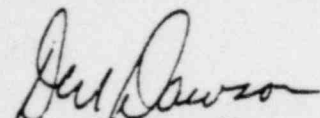
Gentlemen:

The information contained in the attachment to this letter is in response to a request by telephone from Dr. A.T. Clark of your staff to our C.C. Herrington on June 17, 1981. These questions relate to the codes, guides and standards selected during the engineering design phase for structures, systems and components important to safety.

Please contact H.A. Rogers (408\*925-6496) or C.C. Herrington (408\*925-6385) if there are questions regarding the attached information.

Respectfully,

GENERAL ELECTRIC COMPANY



D.M. Dawson, Manager  
Licensing & Transportation

DMD:HAR:bn

Attachment

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ATTACHMENT

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

6/23/81

The following information is provided in response to a request by telephone from Dr. A.T. Clark, NRC, to C. Herrington, GE, on June 17, 1981. References are based on the *Consolidated Safety Analysis Report for Morris Operation* (CSAR) NEDO-21326 including revisions through the proposed Revision C3 as contained in Attachment G to Dr. B. Wolfe's letter of January 12, 1981, and additional material furnished with D. Dawson's letter of February 4, 1981.

The structures, systems and components at Morris Operation designated as important to safety were designed and fabricated under quality assurance programs as noted below. Items are listed using the numerical designations used in the CSAR at §11.3.4.

1. *Fuel storage basin including concrete walls, floors, expansion gates, and basin liners.*
  - a. USAEC reviewed the design of these structures, as part of the Midwest Fuel Recovery Plant (MFRP), now Morris Operation. The design was approved for construction and a Provisional Construction Permit, CPCSF-3, was issued in December 1967.
  - b. The quality assurance program for MFRP was documented in Supplement 3, *Design and Analysis Report*, NEDO-10006-3, January 1970. The *Safety Evaluation of the Midwest Fuel Recovery Plant*, Docket No. 50-268, issued by the USAEC in December 1972 includes a statement regarding AEC inspection: "... we have concluded that the facility has been constructed in accordance with the application ... we conclude that the (quality assurance) program provides adequate assurance that the health and safety of the public and operating personnel will be protected." (Reference page 65 at §4.3.)
  - c. Codes, guides and standards were selected during the design process from those in general use at that time, to meet the design criteria established for the facility. The description of storage basin construction contained in the CSAR con-

solidates the detailed design previously reviewed and approved by the USAEC. Discussions of seismic and tornado analysis in the CSAR include references to more recent standards where these are now in use and equivalent to those used during the original design. If the basin were to be designed using codes, guides and standards now in effect there would be no safety-related differences. For example, ACI-318 used in the design of the existing basin is still applicable today. Codes, guides and standards listed below are taken from the CSAR, Table 4-4:

<u>CG&amp;S</u>	<u>First Reference</u> <sup>*</sup>	<u>Reason for Selection</u>
Uniform building code	5.3.1	Standard code for construction practices.
Reg. Guide 1.76 <sup>**</sup>	4.2.1.1	Tornado region definitions
ASTM-C150 (Type 2)	5.5.1.2 <sup>≠</sup>	Specifications for concrete construction to meet criteria.
ASTM-A15		
ACI-318	4.2.5.2.1	Building code requirements for reinforced concrete construction.
AISC Steel Construction Manual <sup>***</sup>	4.2.4.2	Reference document providing data and methods used in determining yield stress and other characteristics of steel structures.
ASTM-262	5.5.1.3	Specification for Huey test to determine corrosion rate for basin liner.
AWS-ASTM	App. A.13	Weld specifications (applicable to cask drop analysis).

\* CSAR Section

\*\* Issued 1974; original analysis based on AIA Technical Reference Guide, TRC 13-2, U.S. Weather Bureau, and publications by the U.S. Department of Commerce.

\*\*\* This manual is in general use for design purposes.

2. *Fuel storage system, including supporting grids and associated components and basket assemblies.*

- a. USNRC reviewed the design of the fuel storage system and issued an amendment to Materials License No. SNM-1265 in December 1975 authorizing an increased fuel storage capacity at Morris Operation. Installation of the new storage system was completed in 1976.
- b. The quality assurance program applicable to the new fuel storage system is contained in *Spent Fuel Services Operation Quality Assurance Plan*, NEDO-20776 (CSAR Appendix B.8). The quality assurance program applied to the fuel storage system was reviewed in the USNRC's Safety Evaluation Report, NR-FM-001 dated December 3, 1975. The conclusions of this report include the statements, "... GE's QA program ... provides a comprehensive system of planned and systemic controls such that quality - related activities will be conducted in accordance with the requirements of Appendix B to 10 CFR 50. The staff therefore concludes that GE's QA program is acceptable ...".
- c. Codes, guides and standards selected during the design of the fuel storage system meet the design criteria established for the system, including nuclear criticality control and seismic design considerations. The codes, guides and standards listed below are taken from the CSAR, Table 4-4:

<u>C,G&amp;S</u>	<u>Reference</u>	<u>Reason for Selection</u>
Reg. Guide 1.60 Reg. Guide 1.61	4.2.4.2	Seismic criteria applicable to reactors, selected as most applicable to fuel storage system.
ANSI-N18.2A	4.2.5.2	Standard methodology for criticality safety analysis.
AISC Steel Construction Manual**	-	Reference document

\* CSAR section

\*\* This manual is in general use for design purposes

3. *Unloading pit doorway guard:*

The unloading pit doorway guard was approved as part of the project to increase capacity as noted at 2. a, preceding. The quality assurance program described for the fuel storage system (2.b, preceding) also applied to the doorway guard. The design is based on conventional engineering practice and references, such as the AISC Steel Construction Manual.

4. *Fuel element grapples* and

5. *Storage basket yokes*

These devices were designed and fabricated under provisions of the quality assurance plan (CSAR Appendix B.8). No specific codes, guides or standards are referred to in the CSAR for these devices.

Other codes, guides and standards listed in the CSAR, Table 4-4, but not discussed above, are specifications for various steels, such as ASTM-A514, and AP-650, Appendix D, a tank construction specification.

NOTICE OF DISTRIBUTION  
to  
SERVICE LIST - DOCKET NO. 70-1308

In the matter of General Electric's application for renewal of Materials License No. SNM-1265, copies of the documents discussed in the attached letter have been forwarded to the law firm of Mayer, Brown and Platt, 231 South LaSalle, Chicago, IL. 60604, counsel for General Electric Company, for transmittal to the service list as shown below:

Andrew C. Goodhope, Esq., Chairman  
Atomic Safety and Licensing Board  
3320 Estelle Terrace  
Wheaton, Maryland 20906

Atomic Safety and Licensing  
Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dr. Linda W. Little  
Atomic Safety and Licensing Board  
5000 Hermitage Drive  
Raleigh, North Carolina 27612

Docketing and Service Section  
Office of the Secretary  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

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List 3/28/80 A