



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to Post Office Box 767
Chicago, Illinois 60690

April 27, 1978

Director
Division of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: LaSalle County Station Units 1 and 2
Supplemental Information Concerning
Application for Special Nuclear Material License
NRC Docket Nos. 50-373 and 50-374

Reference (a): M. S. Turbak letter to Director, Division
of Nuclear Material Safety and Safeguards dated
May 17, 1977

Dear Sir:

Reference (a) transmitted Commonwealth Edison's
application for a special nuclear material license for LaSalle
County Station Units 1 and 2. Subsequent to that transmittal
on January 10, 1978, I had a telecon with Mr. J. Delaney of
your Staff requesting additional information. Enclosed is our
response to your questions.

Six (6) copies of this letter are provided for your
use.

Please address any questions concerning this subject
to this office.

Very truly yours,

M. S. Turbak
Nuclear Licensing Administrator
Boiling Water Reactors

attachments

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PDR ADOCK 05000373
A PDR

ATTACHMENT

Responses to NRC Questions on
LaSalle County Station
Special Nuclear Material License Application

Question 1

What plans do we have for fuel "security" during handling and storage?

Response

There are three general areas where fuel may reside for varying periods of time prior to its installation in the reactor. These areas are:

1. Fuel receiving area consisting of the area immediately outside of the equipment access building, the equipment access building itself, and the reactor building trackway.
2. Outdoor storage area as described in the SNM license application.
3. Refueling area consisting of the refueling floor, the new fuel storage vault and the spent fuel storage pool.

During plant construction, whenever fuel is being handled or stored in any of these areas, access to the area will be controlled. Unauthorized personnel will be prevented from entering the area by either locked physical barriers or by watchmen stationed at each entrance of the area.

Question 2

Justify the 6000 kg limit on total weight of U^{235} contained in stored SNM.

Response

Each fuel assembly contains an average of 3.42 kg of U^{235} . The 6000 kg specified in our license application accounts for two full cores of 764 assemblies, one reload of 191 assemblies, and allowance for additional assemblies required to replace those rejected during receiving inspection but not immediately returned to the vendor and an allowance for neutron detectors as listed in our application.

Question 3

Justify the fuel storage K values.

Provide the K value calculations for the fuel storage area or supply the fuel storage rack spacing and dimensions.

Response

Attached are the following GE documents which present the requested dimensional and material information

<u>Document No.</u>	<u>Title</u>
761E388, Sht. 11	Refueling Facilities Arrangement
767E296, Shts. 1 & 2	Installation Kit
	Fuel Storage Vault
22A3851	Equipment Storage and Fuel Storage Vault
	Quality Requirements Specification

The quality requirements specification provides information concerning the types of materials used in the fabrication of the racks. The 767E296 series of drawings portrays the construction of the racks in a detailed manner, and portrays its individual components. Drawing 761E388, Sheet 11 also portrays the new fuel storage racks with the addition of dimensions portraying the center-to-center distances between fuel assemblies. The spacing of the fuel assemblies is as follows: The center-to-center dimension within a storage casting is seven inches. The center-to-center dimension between assemblies in adjacent castings is 12.25 inches.

Question 4

What will be the maximum fuel enrichment

Response

Core average and assembly average enrichments were specified in our original SNM license application. The maximum enrichment of any single fuel rod is 3.0% for the initial core and 3.6% for reloads.

EIS IDENT: GEPF 100K & CHOL VAOULT

ACG 8/23/76

DOCUMENT NO. 2212851 REV. A1

GENERAL ELECTRIC

APPLICATION 2328173 2368350

NUCLEAR ENERGY DIVISION

MPLS: FIG/E2-E01)E012

QUALITY REQUIREMENTS

TYPE SPECIFICATION

☒ SPECIFICATION ☐ DRAWING ☐ OTHER

DOCUMENT TITLE

Equipment Storage Rack and Fuel Storage Vault

LEGEND:

7.12.05

REVISIONS		C												
0	DMF-108													
1	General Document Change. Sheets 4, 5, 7, 8, 9, 10 and 11 were affected. Changes were identified with a page (4). Per ICH NF71109. CHKD BY <i>E. A. Hartman</i> APR 30 1976	5-41-75 7-387												
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1. SCOPE

1.1 This quality requirements specification defines the minimum quality requirements for the Equipment Storage Rack and Fuel Storage Vault [MPL (S) F16/F22-E011/E012].

1.2 These quality requirements must be satisfied before any quantity of this essential component is shipped to either a Customer or a reactor site.

2. APPLICABLE DOCUMENTS, CODES, AND STANDARDS

2.1 General Electric Company Documents

2.1.1 The following documents form a part of this specification to the extent specified herein:

2.1.2 Supporting Specifications and Instructions

a. Product Quality Checklist, Part I and II -----	Attached
b. Product Quality Certification -----	Form NED-895-A
c. Process Specification - Arc Welding of Aluminum and Aluminum Alloy for Storage Equipment -----	21A8644
d. Test Method - Radiographic Requirements -----	213A5256
e. Bar, Type 304 Austenitic Stainless Steel -----	B50YP17
f. Material Specification - Bar, Ni-Cr-Fe Alloy (Inconel X-750) -----	B50YP44
g. Test Method - Liquid Penetrant Examination -----	E50YP4
h. Process Specification - Age Hardening of Ni-Cr-Fe Alloy (Inconel X-750) -----	P10JYP2
i. Chromium-Alloy Coating (Electroplating) -----	P16BYP3

2.2 Codes and Standards

2.2.1 The following codes and standards, of the issue in effect on the date of award of contract, form a part of this specification to the extent specified herein.

2.2.2 American Society of Mechanical Engineers (ASME)

- a. ASME Boiler and Pressure Vessel Code
 - (1) Welding Qualifications ----- Section IX

GENERAL ELECTRIC
NUCLEAR ENERGY DIVISION

DOCUMENT NO. 22A3851
SHEET NO. 3

REV. NO. 0/

2.2.3 Nuclear Regulatory Commission (NRC) (formerly AEC)

- a. Codes of Federal Regulations 10 CFR 50.
 - (1) General Design Criteria --- Appendix A
 - (2) Quality Assurance Criteria for Nuclear Power Plants --- Appendix B

2.2.4 American Society for Testing and Materials (ASTM)

- a. Carbon and Alloy Steel Nuts for Bolts for High-Pressure and High-Temperature Service ----- A 194
- b. Aluminum-Alloy Permanent Mold Castings ----- B 108
- c. Aluminum-Alloy Sheet and Plate ----- B 209
- d. Aluminum-Alloy Bars, Rods, and Wires ----- B 211
- e. Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes ----- B 221
- f. Aluminum-Alloy Standard Structural Shapes, Rolled or Extruded ----- B 308
- g. Radiographic Testing ----- E 94
- h. Inspection of Aluminum and Magnesium Castings Series II, Reference Radiographs ----- E 155

3. REQUIREMENTS

3.1 The Equipment Storage Rack and Fuel Storage Vault shall be classified as essential to the safety of the plant according to the definition of the NRC General Design Criteria, 10 CFR 50, Appendix A. This classification is based on their function of maintaining a geometrically safe configuration of spent fuel, new fuel, and defective fuel during storage.

3.1.1 The Equipment Storage Rack and Fuel Storage Vault shall be designed to meet the requirements of 10 CFR 50, Appendix A.

3.1.2 The Equipment Storage Rack and Fuel Storage Vault shall be manufactured under a controlled program which satisfies 10 CFR 50, Appendix C.

3.2 The quality requirements related to the above safety function and imposed by the manufacturing drawing and specifications are as follows.

3.2.1 Fuel Rack

3.2.1.1 The fuel rack casting material shall meet the requirements of ASTM B 108, Alloy 6670B-T61. The radiograph quality shall meet the acceptance criteria of ASTM E 155 as determined by ASTM E 94 and acceptance criteria shall be per GE drawing 213A5255.

3.2.1.2 The pin material shall meet the requirements of ASTM B 211, Alloy 6061-T651.

3.2.1.3 Assembly welds shall be made to GE specification 21A644 and where specified on drawings, liquid penetrant examined for defects and evidence of poor weld quality per GE test method E50YP4. Each welder and welding procedure shall be qualified per ASME Section IX.

3.2.2 Storage Rack

3.2.2.1 The storage rack material shall meet the requirements of ASTM B 209, Alloy 6061-T651.

3.2.2.2 The pin material shall meet the requirements of ASTM B 211, Alloy 6061-T651.

3.2.2.3 Assembly welds shall be made to GE specification 21A644 and where specified on drawings, liquid penetrant examined for defects and evidence of poor weld quality per GE test method E50YP4. Each welder and welding procedure shall be qualified per ASME Section IX.

3.2.3 Cruciform

3.2.3.1 The cruciform beam material shall meet the requirements of ASTM B 221 or B 308, Alloy 6061-T6.

3.2.3.2 The plate material shall meet the requirements of ASTM B 209 or B 211, Alloy 6061-T651.

3.2.3.3 Assembly welds shall be made to GE specifications 21A644 and where specified on drawings, liquid penetrant examined for defects and evidence of poor weld quality per GE test method E50YP4. Each welder and welding procedure shall be qualified per ASME Section IX.

3.2.4 Beam

3.2.4.1 The square tubing and channel material shall meet the requirements of ASTM B 221, Alloy 6061-T6.

GENERAL ELECTRIC
NUCLEAR ENERGY DIVISION

22A3851

SH. NO. 5

REV. 1

3.2.5 Wall Fitting

3.2.5.1 The support plate, spacer plate, and mounting plate material shall meet the requirements of ASTM B 209, Alloy 6061-T65.

3.2.6 Detail Parts

3.2.6.1 The pin material shall meet the requirements of GE specification B50YP17, A1, B1, or B1.

3.2.6.2 The bridge plate material shall meet the requirements of ASTM B 209, Alloy 6061-T65.

3.2.6.3 The hex head bolts material shall meet the requirements of GE specification B50YP44, A1 or B1, shall be age hardened per GE specification P10JYP2A, and indicated surfaces shall be electrolyzed per GE specification P16B-P3A.

3.2.6.4 The hex head nut material shall meet the requirements of ASTM A 194, Grade 8 and maximum hardness requirements.

4. RECORDS

4.1 At the time of shipment of each Equipment Component (or lot), all parts of the Product Quality Checklist (attached) will be completed. Copies of the Product Quality Certification (PRD form 875A) will then be shipped to the Project Manager within 30 days, for delivery to the Customer.

4.2 Unless otherwise instructed, within 30 days of shipment of the last Equipment Component, the completed Product Quality Certification (PRD form 875A) will be shipped to the Project Manager for delivery to the Customer.

July 26, 1978

CODE

AGNC-86

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