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NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-8931

March 7, 2001

Duke Energy Corporation
ATTN: Mr. H. B. Barron
Vice President
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

SUBJECT: MCGUIRE NUCLEAR STATION - NRC INSPECTION REPORT NO. 72-38/2001-01

Dear Mr. Barron:

On February 2, 2001, the NRC completed inspections of the pre-operational and operational activities of the independent spent fuel storage installation (ISFSI) at the McGuire Nuclear Station. The enclosed team inspection report presents the results of those inspections.

During the three-week period covered by this inspection, the conduct of pre-operational and operational ISFSI activities at the McGuire Nuclear Station was generally characterized by safety-conscious operation and appropriate engineering support to the plant.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Should you have any questions concerning this letter, please contact us.

Sincerely,

/RA by David A. Ayres Acting For/

Edward J. McAlpine, Chief
Fuel Facilities Branch
Division of Nuclear Materials Safety

Docket No. 72-38
License No. (General License)

Enclosure: Inspection Report No. 72-38/2001-01

cc w/encl: (See page 2)

cc w/encl:
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	72-38
License No:	General License
Report No:	72-38/2001-01
Licensee:	Duke Energy Corporation
Facility:	McGuire Nuclear Station, Units 1 and 2
Location:	12700 Hagers Ferry Road Huntersville, NC 28078
Dates:	January 16 - February 2, 2001
Inspectors:	W. Gloersen, Senior Fuel Facilities Project Inspector R. Swatzell, Fuel Facilities Inspector R. Chou, Reactor Inspector R. Temps, Safety Inspector, (Spent Fuel Project Office (SFPO))
Accompanying Personnel:	S. Whaley, Project Engineer (SFPO)
Approved by:	Edward J. McAlpine, Chief Fuel Facilities Branch Division of Nuclear Materials Safety

Enclosure

EXECUTIVE SUMMARY

McGuire Nuclear Station, Units 1 and 2
NRC Inspection Report 72-38/2001-01

The scope of this team inspection included a review and onsite observations of the licensee's pre-operational dry run activities associated with the Transnuclear Spent Fuel Dry Storage System (TN-32A). In addition, this inspection included observations of aspects of the licensee's first spent fuel loading operations associated with the TN-32A. The report covers a three week period of inspections conducted by both region-based and Spent Fuel Project Office (SFPO) inspectors in the areas of spent fuel loading dry runs and operations.

Pre-Operational Testing of the Independent Spent Fuel Storage Installation (ISFSI)

- The dry-run activities were conducted well. The supporting procedures were detailed, incorporated licensing commitments, and worked well with only minor problems. When problems were encountered they were resolved appropriately. Personnel participating in the dry-run adhered to procedures, were safety conscious, and observed proper foreign material exclusion practices while in the vicinity of the spent fuel pool.

- The radiological protection program was acceptable and ensured that the requirements of 10 CFR 20 would be met and that occupational exposures from ISFSI operations would be as low as reasonably achievable.

- The use of administrative controls and the appropriate radiological instrumentation to limit and monitor radiological exposure during the ISFSI dry run exercise was adequately demonstrated.

10 CFR 72.212(b) Evaluations

- The Certificate of Compliance requirements for performing a thermal test of the TN-32A cask were satisfied.

- The 10 CFR 72.48 Evaluation, Screening or Evaluation for the deviations found during cask fabrication process or the loading procedure revision changes were adequate.

- The required written evaluation of radioactive materials in effluents and direct radiation associated with ISFSI operations per the requirements of 10 CFR 72.212(b)(2)(iii) were satisfactorily performed.

- Training modules were developed under the general licensee's training program in accordance with 10 CFR 72.212(b)(6) and the TN-32 Technical Specification 5.1.

Operation of the ISFSI

- The procedures used for loading and transporting the spent fuel dry cask and related activities were adequate to provide enough details for craft personnel to conduct loading, lifting, and transporting operations in a safe manner.

Attachment:
Partial List of Persons Contacted
Inspection Procedures Used
List of Acronyms

REPORT DETAILS

Summary of Plant Status

The licensee completed the pre-operational testing activities and required evaluations associated with the Transnuclear Spent Fuel Dry Storage System (TN-32A) on January 19, 2001. The Independent Spent Fuel Storage Installation (ISFSI) pad area security system was activated on January 18, 2001. On January 29, 2001, the licensee initiated spent fuel loading operations by lowering the TN-32A into the spent fuel pool. Spent fuel assembly loading began on the same day. The remainder of the operation, including lid closure, vacuum drying, helium backfilling, and decontamination, was performed safely. The TN-32A cask was placed on the transporter located on the ground elevation of the fuel building truck corridor on February 1, 2001. The TN-32A was moved to the ISFSI storage pad on February 1, 2001. The calculated heat load for the first cask was approximately 13.04 kilowatts (kW). The collective dose to load and transport the first cask was approximately 47 person-millirem.

1. Pre-Operational Testing of the ISFSI (IP 60854)

1.1 Inspection Scope

The inspectors reviewed selected portions of the licensee's pre-operational testing of the Transnuclear TN-32A spent fuel storage cask to determine the licensee's readiness to load spent fuel into a cask for long term dry storage. Inspection reviews also included discussions with personnel, observation of dry-run activities, and review of related procedures.

1.2 Observations and Findings

1.2.1 Dry Run Activities

The inspectors observed dry run activities conducted in the Unit 2 fuel handling building during the week of January 15, 2001. Evolutions observed included: cask movement to and from the cask decontamination pit to the cask pit area in the spent fuel pool (SFP), loading of a dummy fuel bundle into the cask, underwater installation of the cask lid, vacuum drying of the cask, various helium leak detection tests, and movement of the cask to and from the ISFSI pad.

The inspectors noted that the evolutions were well controlled. When problems were encountered, such as a stuck guide pin, they were resolved appropriately. Pre-evolution and turnover briefings were observed and good emphasis on personnel safety and foreign material exclusion controls around the SFP were noted. These practices were consistently observed in the field and included wearing of hard hats during crane movement, use of tethers on safety glasses and taping of open pockets to prevent dropping items in the SFP, and use of life vests by personnel working inside the SFP hand rail area.

The inspectors previously requested the load test records for the fuel building 125-ton overhead crane. The licensee could not locate the load test records for the 125 ton fuel building crane and committed to perform a load test for this crane before loading spent fuel into the TN-32A cask. The inspectors reviewed the load test procedure, TN/2/2481/P1/01C, Load Test of the 125 Ton Fuel Building Crane for Unit 2, Revision 0. The 125 ton fuel handling building crane and the 4 ton auxiliary crane were tested with approximately 110 percent of the rated loads (138 tons and 4.6 tons, respectively). The test load of 138 tons consisted of the empty TN-32A cask plus two counterweights from other cranes. Both cranes successfully carried their test loads around the fuel building truck corridor to test the cranes' function and brakes. The load tests were not performed over the spent fuel pool area due to safety considerations. The licensee also performed crane inspections in order to ensure the safety of the crane and supporting structures. The licensee used the following two procedures to perform the inspections: (1) IP/0/B/3262/001, Overhead Cranes and Hoists Electrical Inspection and Maintenance, Revision 004 and (2) MP/0/A/7700/096, Quarterly/Annual Inspection and Servicing of Overhead and Gantry Cranes, Revision 005. In addition, the 10 CFR 50.59 evaluation required by 10 CFR 72.212(b)(4) indicated that the weight of each empty cask was measured by the cask vendor and the certificate of weight was accompanied with the cask. The licensee would compare the certified weight of the cask with the design weight. If the certified weight was greater than the design weight, the licensee would compare the certified cask weight to the lifting capacity of the 125 ton fuel handling building crane and evaluate the maximum weight to be lifted by the crane. If the certified cask weight was less than the design weight, then no evaluation would be performed.

1.2.2 Operations Procedure Review

1.2.2.1 MP/0/A/7650/187, Revision 1, "Loading Spent Fuel Assemblies Into TN-32A Casks"

The inspectors reviewed the procedure to ensure that it contained sufficient detail for the evolutions it controlled and that appropriate licensing commitments were incorporated within it. The procedure was noted to be quite detailed and provided specific instructions for controlling the cask movement and loading operations. Numerous supporting enclosures provided instructions for activities such as bolt torqueing and connection and operation of vacuum drying and helium leak testing equipment. Good detail was noted, such as procedure steps and an enclosure for establishing and keeping track of the amount of demineralized water added to the SFP during cask and cask component washdowns.

One question raised during the review involved the qualification of McGuire personnel operating the helium leak testing equipment. NRC staff had expected that personnel operating this equipment would be certified to SNT-TC-1A, "American Society for Nondestructive Testing, Personnel Qualification and Certification in Nondestructive Testing." However, the McGuire personnel operating the leak test equipment were not qualified to this standard during the pre-operational testing of the ISFSI, and instead had received specialized training through the equipment vendor.

Following further discussion among NRC staff, a teleconference was held with the licensee staff on January 23, 2001. The outcome of this teleconference was that while

McGuire staff stated they did not agree with the NRC's position, they would ensure that inspection personnel would be qualified to SNT-TC-1A for the initial round of cask loadings.

1.2.2.2 MP/0/A/7650/188, Revision 1, "Operation of Dry Cask Transporter"

The inspectors reviewed the procedure to ensure that it contained sufficient detail for the evolution it controlled and that appropriate licensing commitments were incorporated within it. The procedure was noted to be quite detailed and provided specific instructions and controls on items such as cask load path, restriction on cask height to meet the 18 inch licensing limit, operational status of buried systems traversed by the load path, control of transient combustibles during transportation, and restrictions on cask component temperatures prior to movement to or from the ISFSI pad. With respect to this last item, the inspectors noted that procedure step 11.4.11 required a one time check that the upper trunnion temperature be greater or equal to 40 °F prior to movement of a loaded cask. Given that transport time between the SFP building and the ISFSI pad takes approximately two hours, the inspectors questioned McGuire personnel as to how the trunnion temperature limit would be assured throughout movement in cold weather conditions. The inspectors were informed that the procedure would be modified to address the inspectors' concern. During the week of January 29, 2001, the inspectors verified that MP/0/A/7650/188 was revised by adding Step 4.4.1.2 which required the installation of thermal blankets on the trunnions and the installation of continuous temperature monitoring instruments when the outside ambient air temperature was below 40 degrees F.

1.2.2.3 XSFM-004, Revision 0, "Workplace Procedure for Selecting Spent Fuel for McGuire General License Independent Spent Fuel Storage Installation"

The inspectors reviewed the fuel selection procedure for consistency with both the licensee's 10 CFR 72.212(b) evaluation and the site specific dose calculations. The licensee's evaluation, which considered five casks only, was based on loading fuel and burnable poison rod assemblies (BPRAs) that were cooled longer than what was assumed in the Safety Analysis Report (SAR), and preferential loading of fuel. The licensee also took credit for a dam located in the vicinity which provided natural shielding to persons on the lake. The inspectors noted that it was incumbent upon the general licensee to ensure that the assumptions used in site specific evaluations were either the same as was used in the SAR or that any non-conservative assumptions were adequately addressed. The inspectors discussed the following inconsistencies with the licensee who agreed to revise the procedure:

(1) The site specific calculations assumed a longer (less conservative) cooling time for the BPRAs, than what was assumed in the TN-32 SAR. Thus, Section 3.2.4 and the BPRA burn-up curve in procedure XSFM-004 needed to be changed to agree with the calculations (ten year cooling and a burn-up of 30 Giga-watt days). The licensee indicated that the assemblies to be loaded into the first TN-32A were verified to have at least a 10 year cooling time. In addition, the licensee indicated that the issue raised by the inspectors will be reviewed and corrected prior to the second TN-32A cask loading.

(2) Section IV of the 10 CFR 72.212 evaluation states that BPRAs are the only components to be loaded under this evaluation, thus Thimble Plug Assembly (TPAs) are not allowed. Therefore, section 3.2.5 in procedure XSFM-004 needed to be changed to disallow TPAs and the TPA burnup curve needed to be deleted or it should be noted that TPAs could not be loaded at this time. The inspectors also noted that the site specific evaluation did not address TPAs. The licensee reviewed and verified that the TPA components would not be authorized for loading into the first TN-32A cask. The licensee indicated that they would perform an evaluation prior to fuel selection for the second TN-32A loading campaign and either revise the TN calculations to include TPAs or revise XSFM-004 to restrict allowable components to BPRAs only.

(3) The sign off page of the procedure did not appear to limit the fuel to be loaded as Westinghouse design only, which is a requirement of the cask Technical Specifications. The inspectors observed that the licensee also had B&W fuel assemblies at the McGuire Nuclear Station. However, the inspectors noted that Criteria 3.2.3 of Enclosure 5.1 of XSFM-004, Rev.0, limited the fuel assembly design to be loaded into the cask as either standard (STD) or an optimized fuel assembly (OFA), both of which refer to Westinghouse designed fuel assemblies.

1.2.2.4 HP/O/B/1006/025, Revision 0, “Radiation Protection Controls for Loading Spent Fuel Assemblies into TN-32A Dry Storage Casks” and HP/O/B/1006/028, Revision 0, “Radiation Protection Controls for Unloading Spent Fuel Assemblies from TN-32 Dry Storage Casks”

The inspectors verified that licensee procedures HP/O/B/1006/025 and HP/O/B/1006/028 appropriately addressed radiological monitoring and access and control issues associated with the loading, handling, storage, and unloading of the TN-32A Dry Fuel Storage Cask to ensure that the requirements of 10 CFR Part 20 would be met and that occupational exposures from ISFSI operations would be as low as reasonably achievable. The inspector did note that step 4.13 of procedure HP/O/B/1006/025 called for the exhaust of the vacuum drying system to be connected to a high efficiency particulate air (HEPA) filter system to reduce radioactive particulate emissions on the refueling floor during cask vacuum drying operations. The inspectors questioned the licensee as to possible radioactive noble gas (i.e. Krypton-85) evolution during vacuum operations as observed at other utilities during similar cask operations. The licensee acknowledged this concern and consideration was given to procedural changes to route the vacuum exhaust to the Fuel Pool Ventilation System during vacuum drying operations. The inspectors also observed during the dry run exercise that personnel donned the appropriate protective equipment, ingress and egress to radiological areas were properly controlled, area monitoring (beta, gamma, and neutron) was adequate and instrumentation was appropriately calibrated. The inspectors also reviewed the licensee’s method for determining that the summed leak rate for all cask closure seals and over pressure (OP) system was less than or equal to 1.0 E-5 standard cubic centimeters/second air (1.4 E-5 standard cubic centimeters/second helium) and determined that the licensee’s leak test equipment (mass spectrometer unit) sensitivity levels were sufficient and that provisions had been made to perform calibration checks before and after leak detection equipment use.

1.3 Conclusions

Overall, the dry-run activities were conducted well. The supporting procedures were detailed, incorporated licensing commitments, and worked well with only minor problems. When problems were encountered they were resolved appropriately. Personnel participating in the dry-run adhered to procedures, were safety conscious, and observed proper foreign material exclusion practices while in the vicinity of the spent fuel pool.

The licensee had an acceptable radiological protection program to ensure that the requirements of 10 CFR Part 20 would be met and that occupational exposures from ISFSI operations would be as low as reasonably achievable. The licensee demonstrated the use of administrative controls and the appropriate radiological instrumentation to limit and monitor radiological exposure during the ISFSI dry run exercise.

2. Review of 10 CFR 72.212(b) Evaluations (IP 60856)

Section 72.210 of Title 10 of the Code of Federal Regulations (10 CFR 72.210) grants a general license for the storage of spent fuel in an ISFSI at power reactor sites to any person authorized to possess or operate nuclear power reactors under 10 CFR Part 50. Section 72.212 gives the conditions for this general license and 72.212(b) delineates requirements that the general licensee shall meet. The inspectors reviewed the licensee's 10 CFR 72.212(b) report and supporting documentation and evaluations to verify that the Transnuclear TN-32A was suitable for use at the McGuire Nuclear Station under the provisions of the facility's 10 CFR Part 50 license. This inspection pertained to those sections of the 10 CFR 72.212(b) evaluation that were not addressed in inspection report 72-38/2000-01.

2.1 Certificate of Compliance

2.1.1 Inspection Scope

The inspectors reviewed the Certificate of Compliance (CoC) requirements for performing thermal tests of the cask.

2.1.2 Observations and Findings

The inspectors reviewed and verified that the licensee satisfied the CoC requirement for performing a thermal test of the TN-32A cask. The inspectors verified that a letter was sent to the NRC on December 1, 2000, which described the thermal test and the results.

2.1.3 Conclusions

The licensee met the CoC requirement for performing a thermal test of the TN-32A cask.

2.2 Review of Licensee Change Evaluations

2.2.1 Inspection Scope

The inspectors reviewed selected change evaluations required by 10 CFR 72.48.

2.2.2 Observations and Findings

The inspectors reviewed Duke Power Company Nuclear Site ISFSI 10 CFR 72.48 Evaluation Screening and Evaluation for Fabrication Deviations of Cask TN-32A-50. This cask would be used for the first cask loading. The fabricator, cask vendor, and licensee had generated 45 deviations during the cask fabrication period. All of the deviations were generated, evaluated, resolved, and documented during the fabrication through the nonconformance process by whom had the responsibility. The methods of correction were evaluation, drawing revisions, use-as-is, or repair based on the standards or codes. The licensee reviewed and evaluated all of them and summarized them per 10 CFR 72.48 Evaluation Screening and Evaluation. The inspectors considered that the licensee adequately reviewed and documented them as required by 10 CFR 72.48.

The inspectors also reviewed a 10 CFR 72.48 Evaluation for Revision 2 of Procedure MP/0/A/7650/187, Loading Spent Fuel Assemblies Into TN-32A Casks. This procedure was used during the pre-operation testing. After the testing, the license and NRC Review Team provided comments which the licensee incorporated into Revision 2 in order to enhance or improve the loading process. The enhancements included changing the lubricant from Neolube to Fel-Pro N-5000, adding QC inspections for vent and drain port sealing and helium leak testing, adding the requirements to vent the vacuum drying system exhaust through a HEPA filtered vacuum and to the ventilation system, and adding a requirement to notify NRC within 30 days after a cask is loaded.

2.2.3 Conclusions

The inspectors considered the 10 CFR 72.48 Evaluation Screening or Evaluation for the Deviations found during cask fabrication process and the loading procedure revision change to be adequate.

2.3 Review of Radiation Protection Programs Impacted by ISFSI Operations

2.3.1 Inspection Scope

The inspectors reviewed the licensee's 10 CFR 72.212 report and associated documentation regarding the licensee's evaluation (based on five fully loaded TN-32 casks) of radioactive materials in effluents and direct radiation associated with ISFSI operations per the regulations of 10 CFR 72.212(b)(2)(iii) and 10 CFR 72.104.

2.3.2 Observations and Findings

10 CFR 72.212(b)(2)(iii) requires the licensee to perform a written evaluation to establish that the requirements of 10 CFR 72.104 have been met prior to ISFSI use. The requirements of 10 CFR 72.104 limits the annual dose equivalent to any individual who is located beyond the controlled area to 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other critical organ due to the combined contributions from planned discharges to the general environment, direct radiation from the ISFSI, and any additional radiation dose from uranium fuel cycle operations in the region. During review of the licensee's original assessment, the inspectors noted that the annual dose contribution due to direct radiation from the ISFSI to any individual who was beyond the controlled area (425 meters - south of Cowans Ford Dam) was approximately 10.1 millirem (mrem). This dose only included contributions from skyshine radiation as the direct radiation was taken to be minimal based on ground shielding due to the elevation differences between the ISFSI and the river. In addition, the annual offsite dose contribution for the McGuire Nuclear Generation Facility was determined to be 3 mrem, which when combined with the calculated ISFSI contribution of 10.1 mrem per year yields a total annual dose of 13.1 mrem which is below the dose requirements of 10 CFR 72.104. In addition, the licensee's evaluation included calculations to show that the requirements of 10 CFR Part 20.1301(b) (annual dose of 100 mrem to the public and dose rate of 2 mrem/hr) were met due to regulations permitting McGuire's controlled area to be traversed by public roads and waterways. These calculations, taken at the top of the berm approximately 70 meters from the ISFSI for the dose rate estimates (direct and skyshine radiation) and at approximately 76.2 meters from the ISFSI at the water line below the berm for the annual dose estimates (skyshine radiation only; direct radiation effects minimal due to berm shielding), provided a dose rate estimate of 0.37 mrem/hr and an annual dose projection of 12.7 mrem which were well below 10 CFR 20.1301(b) limits. The licensee obtained an occupancy time estimate of 150 hours to project incurred doses by approximately doubling a Regulatory Guide 1.109 guideline value of 67 hours recommended for shoreline recreation.

2.3.3 Conclusions

The licensee had satisfactorily performed the required written evaluation of radioactive materials in effluents and direct radiation associated with ISFSI operations per the regulations of 10 CFR 72.212(b)(2)(iii) and, per this evaluation, the requirements of 10 CFR 72.104 which limits the annual dose equivalent to any individual located beyond the controlled area to 25 mrem to the whole body, 75 mrem to the thyroid, and 25 mrem to any other critical organ due to the combined contributions from planned discharges to the general environment, direct radiation from the ISFSI, and any additional radiation dose from uranium fuel cycle operations in the region.

2.4 Review of Training Program Impacted by ISFSI Operations

2.4.1 Inspection Scope

The inspectors reviewed the licensee's 10 CFR 72.212 report and associated documentation regarding the licensee's implementation of the training program to conduct ISFSI operations.

2.4.2 Observations and Findings

10 CFR 72.212(b)(6) required the licensee to develop training modules under the general licensee's training program. The inspectors verified that the training modules included a comprehensive program for the operation and maintenance of the TN-32 spent fuel storage cask and the ISFSI in accordance with the requirements specified in Section 5.1 of the TN-32 Technical Specifications. The inspectors reviewed the lesson plans, examinations and attendance records for radiological protection, operations, maintenance, and engineering personnel. The content in the lesson plans was acceptable and included the training requirements specified in Section 5.1 of the TN-32 Technical Specifications. The examinations provided a reasonable challenge to the trainees.

2.4.3 Conclusions

Training modules were developed under the general licensee's training program in accordance with 10 CFR 72.212(b)(6) and the TN-32 Technical Specification 5.1.

3. Operation of the ISFSI (IP 60855)

3.1 Inspection Scope

The inspectors reviewed the loading procedure and related documents. The inspectors also observed portions of the cask loading operation and transporting of the cask to the storage area. The purpose of the inspection was to determine if the licensee met licensee commitments, regulatory requirements, and industry standards.

3.2 Observations and Findings

The inspectors reviewed the revised loading procedure MP/0/A/7650/187, Revision 3 which incorporated the comments or enhancements from the pre-operational testing.

The licensee performed spent fuel assembly loading into the TN-32A cask in accordance with MP/0/A/7650/187, Revision 3. Noted differences between the pre-operational and operational activities included, additional weight, radiation, and time needed for loading and drying due to 32 spent fuel assemblies contained inside the cask. The inspectors observed that the licensee operators moved and loaded five assemblies from the spent fuel pool racks into the TN-32A storage location of A4, A5, B1, B6, and C1. The inspectors also observed two operators verifying the assembly identification numbers and locations through the television monitor for the assemblies

contained in the cask. The assembly identification numbers and locations were reviewed and compared to Enclosure 4.6 of procedure OP/0/A/6550/027.

The inspectors observed the licensee QC inspector perform the helium leak tests during the operation. No significant problems were identified.

In addition, the licensee vacuumed water from bolt holes at the top surface of the cask lid in accordance with Step 11.10.2 of procedure MP/0/A/7650/187 which stated that the licensee shall vacuum any residual water from cask lid bolt holes. The inspectors observed that after vacuuming, residual water may trickle back into the bolt hole requiring revacuuming. However, the inspector noted that it is difficult to determine which holes need revacuuming without the use of a flashlight. The licensee wrote PIP No. M-01-00480 to evaluate and resolve the problem.

During the cask loading operation, the inspectors reviewed the working copy of the procedures in order to check that the steps were performed adequately and orderly. The inspectors also verified that the procedure steps were signed off and dated.

The inspectors also reviewed a QC inspector qualification and certification record for the helium leak test and four crane operator qualification records for operating the 125 ton fuel building overhead crane. The inspectors verified that the individuals performing their respective tasks had been either appropriately qualified at McGuire or certified to operate similar equipment at the Catawba Nuclear Station.

3.3 Conclusions

The procedures used for loading and transporting the spent fuel dry cask and related activities were adequate to provide enough details for craft personnel to conduct loading, lifting, and transporting operations in a safe manner. Procedural sign-off practices of helium leak test activities were not in strict accordance with Step 704.6.6 of NSD 704 Nuclear Policy Manual Volume 2. The licensee issued PIP No. M-01-00480 to resolve the problem.

4. Management Meetings

The inspection scope and results were summarized on January 19 and February 2, 2001. A partial list of licensee persons contacted during this inspection is indicated in the Attachment. Although proprietary documents and processes were occasionally reviewed during this inspection, proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

ATTACHMENT

1. PARTIAL LIST OF PERSONS CONTACTED

Licensee Personnel

Barron, B., Vice President, McGuire Nuclear Station
Branch, R., Work Control Coordinator
Bryant, J., Licensing Engineer
Byrum, W., Manager, Radiation Protection
Cash, M., Regulatory Compliance Manager
Dolan, B., Safety Assurance Manager
Geer, T., Manager, Civil/Electrical/Nuclear Systems Engineering
Kirkland, J., Transnuclear, Inc.
Lanka, B., Maintenance Manager
McCutcheon, R., Technical Specialist
McHale, P., Nuclear Training Supervisor
Moore, T.,- Senior Engineer
Nesbitt, B., Engineer
Nolin, J., Modification Engineering Supervisor
Osborne, N., ISFSI Project Manager
Peele, J., Engineering Manager
Schulte, J., Engineering Supervisor - Modifications
Simms, N., Licensing Engineer
Thompson, R., Nuclear Station Instructor
Travis, B., Mechanical Systems and Equipment Engineering Manager
Trezise, C., Modification Manager

Other licensee employees contacted included office, operations, engineering, maintenance, security, health physics, and corporate personnel.

2. INSPECTION PROCEDURES USED

IP 60854	Pre-Operational Testing of an ISFSI
IP 60855	Operation of an ISFSI
IP 60856	Review of 10 CFR72.212(b) Evaluations

3. LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Item Number	Status	Description

None

4. LIST OF ACRONYMS

B&W	Babcock and Wilcox
BPRA	Burnable Poison Rod Assembly
CFR	Code of Federal Regulations
CoC	Certificate of Compliance
HEPA	High Efficiency Particulate Air
ISFSI	Independent Spent Fuel Storage Installation
kW	kilowatts
mrem	millirem
MNS	McGuire Nuclear Station
NRC	Nuclear Regulatory Commission
OFA	Optimized Fuel Assembly
OP	Over Pressure
psi	pounds per square inch
QC	Quality Control
Rev.	Revision
SAR	Safety Analysis Report
SFP	Spent Fuel Pool
SFPO	Spent Fuel Project Office
STD	Standard
TN	Transnuclear
TPA	Thimble Plug Assembly