
INSPECTION PROCEDURE 60852

ISFSI COMPONENT FABRICATION BY OUTSIDE FABRICATORS

PROGRAM APPLICABILITY: 2690 and 2515

SALP FUNCTIONAL AREA: Engineering (ENG)

60852-01 INSPECTION OBJECTIVE

For the purposes of this procedure, three different entities will be referred to: "licensee" - a 10 CFR Part 72 site-specific license holder or a reactor licensee using a 10 CFR part 72 general license; "vendor" - an independent organization that holds the Certificate of Compliance (C of C) for a particular dry cask storage system (DCSS) design and may be authorized by the C of C to approve changes to the cask's design; and "fabricator" - an organization that is physically building the cask and receives oversight from either the "vendor" or "licensee."

01.01 To determine whether a DCSS fabricated by an off-site fabricator, for use in an Independent Spent Fuel Storage Installation (ISFSI), is constructed in accordance with the commitments and requirements specified in the Safety Analysis Report (SAR), NRC's corresponding Safety Evaluation Report (SER), C of C, 10 CFR Part 72 and, if applicable, the site-specific license and technical specifications.

01.02 To determine whether the fabricator's and the licensee's activities are conducted in accordance with the licensee's or vendor's NRC-approved Quality Assurance (QA) program.

60852-02 INSPECTION REQUIREMENTS

02.01 Before any on-site activity, review the SAR, SER, C of C, and, if applicable, the site-specific license and technical specifications for the DCSS being used.

02.02 Determine, by review of selected drawings and procedures, whether the construction and fabrication specifications are consistent with the design commitments and requirements documented in the SAR, SER, C of C, and, if applicable, the site-specific license and technical specifications.

02.03 Verify, by review of selected records, that corrective actions for identified deficiencies have been acceptably completed, and that nonconformance reports have been properly dispositioned in a timely manner.

02.04 Verify, by review of selected records and interviews with selected fabricator personnel, that individuals performing quality-related activities are properly trained and certified.

02.05 Determine, by interviews with selected personnel, whether the individuals constructing the component and their foreman and/or supervisor are familiar with the specified design, designated fabrication techniques, testing requirements, and quality controls for construction of the DCSS.

02.06 Verify, by direct observation or review of selected records, that materials, components, and other equipment received by the fabricator meet the procurement document specifications. Verify, by review of selected records, that the procurement specifications conform to the design commitments and requirements contained in the SAR, SER, C of C, and, if applicable, the site-specific license and technical specifications.

02.07 Verify, by direct observation, that DCSS components are being fabricated in accordance with approved methods, procedures, and specifications.

02.08 Determine, by direct observation or interviews with selected personnel, whether supervision and Quality Control staff are present and provide appropriate oversight during fabrication activities.

02.09 Verify that fabrication activities are conducted under an approved QA program and that provisions for reporting defects which could cause a substantial safety hazard, as required by 10 CFR Part 21, have been implemented.

02.10 Determine whether the fabricator has been audited by either the licensee's or vendor's QA staff and/or inspected by the NRC. Review applicable QA audit and/or inspection reports that were issued within the previous 2 years. For selected audits and inspection findings, determine whether corrective actions for such findings were technically adequate and whether the findings were dispositioned in a timely manner.

60852-03 INSPECTION GUIDANCE

General Guidance

The focus of this inspection procedure is to determine whether the fabricator is constructing ISFSI components in accordance with the licensee's or vendor's QA program, and whether the DCSS component, as fabricated, will perform its intended function as stated in the SAR, SER, C of C, and, if applicable, the site-specific license and technical specifications. DCSS components must be constructed under an NRC-approved QA program. This may be either the licensee's or fabricator's program. Refer to IP 608XC for guidance on inspecting design changes and modifications.

Specific Guidance

03.01 SARs and SERs describing the fabrication requirements and functions of a particular DCSS's components are available for each type of DCSS that is approved for use in storing spent fuel. Additional information on the operational commitments for particular DCSS designs may also be found in the C of C and, if applicable, the site-specific ISFSI license and technical specifications. DCSS designs vary and care must be taken to review the correct documentation. Copies may be obtained from the Division of Reactor Safety or from the Spent Fuel Project Office (NMSS/SFPO). While the SER can document or clarify commitments made by the licensee or vendor, it does not serve as an independent basis for enforcement actions.

03.02 Construction and fabrication specifications include, but are not limited to, component material specifications, fabrication techniques, examination techniques, and required dimensions and tolerances. Previously identified problems related to DCSS component fabrication included incomplete documentation of actual fabrication activities in fabrication traveler documents; failure to explicitly state required critical component dimensions, such as wall thickness, on fabrication

traveler documents; and failure to require verification of critical component dimensions using a specified non-destructive examination (NDE) technique (i.e.- ultrasonic testing) as required in the DCSS design documentation.

03.03 For nonconformance reports where the adverse condition is determined to be acceptable "as is", the report should contain sufficient information to justify why the nonconforming condition does not compromise the ability of the component to perform its intended functions. Nonconformances should be dispositioned before the DCSS is released to the licensee, unless otherwise authorized by the licensee. Nonconforming conditions that are resolved by design changes should be carefully examined to ensure that component function is not compromised. Assistance in determining component function may be obtained from NMSS/SFPO. Supplemental information on inspecting design changes can be found in IP 60851.

03.04 Fabricator personnel performing quality functions may include welders, NDE inspectors, quality control (QC) staff, and QA auditors. A program for certification for each of these personnel should have been defined and implemented by the fabricator and approved by the licensee.

03.05 No specific guidance.

03.06 Supplemental guidance on the quality classification levels of ISFSI components may be found in the references.

03.07 Required methods of fabrication may be discussed in the SAR, SER, or C of C and, if applicable, the site-specific license.

03.08 No specific guidance.

03.09 No specific guidance.

03.10 Since fabricators build components for several licensees, they may have been previously inspected by NMSS, NRR, and/or regional staff. Information on inspections of ISFSI vendors and fabricators may be obtained from NMSS/SFPO. The licensee's QA staff or other licensees' QA staffs may also have audited fabricator activities. Information about audits of specific fabricators may be obtained from the owners' groups for specific DCSS designs, NMSS, or the licensee's QA staff.

60852-04 INSPECTION RESOURCES

To prepare for these inspections each inspector should spend approximately 16 hours for in-office review. Inspection activities will require approximately 30 hours, each, by three inspectors at the vendor's or fabricator's facilities. Documentation is estimated to require 16 hours per inspector. NMSS vendor inspection staff will primarily conduct the inspection of fabricators and vendors, with assistance from NMSS/SFPO and regional inspectors. Inspection hours may vary depending on the amount of activity occurring at the fabricators.

60852-05 REFERENCES

NRC Information Notice 95-29, "Oversight of Design and Fabrication Activities for Metal Components Used in Spent Fuel Dry Storage Systems," June 7, 1995.

NUREG/CR-6407, "Quality Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety," October 1995 (DRAFT).

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