TRANSNUCLEAR
AN AREVA COMPANY

July 2, 2013
E-35984

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852

Subject: Supplement to Submittal of Biennial Report of 72.48 Evaluations Performed for the Standardized Advanced NUHOMS® System, Certificate of Compliance (CoC) 1029, Docket 72-1029

Pursuant to the requirements of 10 CFR 72.48(d)(2), this submittal provides a summary of a 72.48 evaluation performed for the CoC 1029 Standardized Advanced NUHOMS® System. This evaluation, associated with a non-conformance, was approved in 2008, and it should have been provided in a previous report. Resolution of Transnuclear corrective action report (CAR) 2013-16 includes preventative actions associated with this situation.

Enclosure 1 provides the 72.48 evaluation summary, for LR 721029-226, Revision 0, including indication as to whether the evaluation had associated Updated Final Safety Analysis Report (UFSAR) changes that were incorporated into the UFSAR for the Standardized Advanced NUHOMS® System, ANUH-01.0150.

Should you or your staff require additional information, please do not hesitate to contact me at 410-910-6878 or Clark Vanderniet at 410-910-6933.

Sincerely,

Donis Shaw
Licensing Manager

cc: B. Jennifer Davis (NRC SFST), provided in a separate mailing

Enclosures:

1. Evaluation Summary for LR 721029-226 Revision 0

7135 Minstrel Way, Suite 300, Columbia, MD 21045
Phone: 410-910-6900 • Fax: 410-910-6902

NMSS26
NMSS

Evaluation Summary for LR 721029-226 Revision 0

LR 721029-226 Revision 0 – (no associated UFSAR change)

Change Description

The change involved a nonconformance when a trainee welder performed a root pass circumferential shell weld for one dry shielded canister (DSC) while under the direct observation of a properly qualified welder. The associated specification requires that all welders and welding operators be qualified in accordance with NB-4300 or NG-4300, as applicable, and the requirements of Section IX.

Evaluation

The DSC has confinement, shielding, criticality control, structural and thermal safety functions. The primary function of the DSC is to provide confinement for the spent nuclear fuel. This is achieved by the stainless steel shell and two inner cover plates (top and bottom ends) of the shell assembly. There are redundant outer cover plates (top and bottom) to assure confinement integrity. The DSC provides gamma shielding at its ends by the use of thick end plugs. These provide ALARA dose rates at the top of the canister (for DSC drying and sealing operations) and at the bottom (for minimizing dose rates at the AHSM doorway). Shielding in the radial direction is not a safety function of the DSC, although it does provide a small amount due to the shell thickness. The basket's thermal function is to transfer heat from the inside of the DSC to the outer shell.

Criticality control is provided by the DSC's internal basket assembly. A series of spacer disks and axial support rods maintain the fuel assemblies in known positions under all normal, off-normal and accident conditions. The thickness and location of the spacer disks, the guide sleeves and poison plates and the relative locations of the fuel assemblies achieve the criticality control function.

The primary pressure boundary, which is ASME SA-204, Type 316 stainless steel, maintains an inert (helium) dry atmosphere inside the DSC to minimize the pressure boundary and fuel degradation.

The effect of using a trainee welder to complete the root pass of the DSC is assessed below:

STRUCTURAL:

The machine used to perform the root pass is an automated welding system in which there is no possible way that the welder has any possibility of affecting or changing any of the critical parameters during the operation of the machine. The only parameter that the welder can control is the weld bead positioning control. If this control is used incorrectly it could lead to a lack of fusion within the finished weld. In order to accept the root pass, a penetrant and a visual examination of the weld were performed to determine that there were no obvious deficiencies.

Once the weld was completed, the shell was subjected to a 100% RT inspection with PT of the finished surface per the specification and drawing requirements. These inspection records are part of the final document package and are subject to review and approval of the ANI and TN QA. It is inconceivable that the trainee welder could have affected the weld filler metal deposited in any detrimental way that would not show up in the NDE performed on the completed weld.

Based on the above analysis, the use of the trainee welder had no impact on the structural function of the DSC.

Evaluation Summary for LR 721029-226 Revision 0

MECHANICAL:

There is no adverse impact. The mechanical functions of the shell are unaffected by the shell circumferential weld. In addition, the NDE performed assured that the completed weld met all design and ASME criteria.

THERMAL:

There is no adverse impact. The limiting source term, and therefore the decay heat load limit for each fuel assembly and the total DSC remained unchanged. The completed DSC shell configuration meets the analyzed condition. Therefore, there is no measurable impact on the calculated cladding and basket material temperatures, or material temperature limits.

SHIELDING:

There is no adverse impact. The finished configuration is unchanged from that assumed in the shielding calculations. Therefore, there is no change in the design basis source term used in the shielding evaluation.

CRITICALITY:

There is no adverse impact. The DSC was drained, vacuum dried, and sealed using normal procedures. There is no change in the assumed physical configuration of the DSC shell. Therefore, there is no adverse impact on criticality resulting from the use of a trainee welder.

WEIGHT:

There is no adverse impact. The weight of the finished weld is the same as if made by a fully qualified welder. This change did not change the DSC CG location.

CONFINEMENT:

There is no impact on the confinement capabilities of the DSCs as there are no new leak paths introduced. The NDE performed on the weld and the final leak testing assured that the DSC meets all of the design basis criteria.

The eight 72.48 evaluation criteria were met.