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Date: 8/20/02 8:56AM
Subject: Draft Plan for Extraction of RVCH Nozzles 2 and 46 Penetration Areas

Similar to the other plans reviewed by the NRC staff regarding the obtaining of samples or removal of nozzles from the RVCH, attached is a draft plan for general discussion at this morning's 9:15 am conference call.
(See attached file: Plan for Nozzles 2 and 46.doc)

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PLAN FOR REMOVAL OF THE DAVIS-BESSE REACTOR VESSEL CLOSURE HEAD AND THE EXTRACTION OF THE PENETRATION AREAS OF CONTROL ROD DRIVE NOZZLES 2 AND 46

PURPOSE

The purpose of this plan is to provide for the removal of the Davis-Besse reactor vessel closure head (RVCH) from the Containment Building, its shipment to the Envirocare of Utah, Inc. facility at Clive, Utah, the extraction of the penetration areas of control rod drive (CRD) Nozzles 2 and 46, and the shipment of these two extracted penetration areas to a facility designated by Nuclear Regulatory Commission (NRC).
The following phases of this plan are discussed below:

- Preparation of the RVCH for Removal from the Containment Building and shipment.
- Removal of the RVCH from the Containment Building and shipment to Envirocare of Utah, Inc.
- Mobilization for extraction of the penetration areas of Nozzles 2 and 46.
- Extraction of the penetration areas of Nozzles 2 and 46.
- Shipment of the extracted penetration areas to the NRC-designated facility.

PREPARATION OF THE RVCH FOR REMOVAL

The RVCH is located in the Davis-Besse Containment Building on the RVCH headstand. Encapsulation of the RVCH will be performed to protect the penetration areas of the RVCH nozzles and to support the following goals:

- Preserve the penetration areas of CRD Nozzles 2 and 46 from external material and entities.
- Prevent the release of by-product material to the environment.
- Maintain dose As Low As Reasonably Achievable (ALARA) during the handling of the RVCH.
- Simplify handling of the RVCH by isolating contamination from workers.

Perform the following steps:

1. Install and fasten a steel cover ("top hat") to the existing service structure support skirt (see attached drawing). This cover will prevent access to the CRD flanges, and therefore the top of the Nozzles 2 and 46 penetration areas.
2. Cover the openings in the support skirt (the original inspection ports also known as "mouse holes," and the recently cut inspection openings) using seal tape to prevent access to the CRD nozzle penetrations.
3. To minimize radiological contamination from the RVCH flange stud holes, carefully inject FP 1.75 180 BF HCFC (an expandable foam) inside the RVCH stud holes where possible. Where it is not practical to apply FP 1.75 180 BF HCFC to the inside of the RVCH flange stud holes, apply the Polymer Barrier System (PBS) from

Bartlett Nuclear Services.

4. Apply Insta-Cote ML-2 (a strippable coating) on the exterior portion of the RVCH that is not enclosed by the service structure support skirt, the service structure support skirt, and the "top hat" in order to seal in place any radiological contamination.
5. Apply Insta-Cote ML-2 to the RVCH flange (top and underside including the key ways), and the stud hole area. No surface inside the reactor headstand will be disturbed, thereby preserving the CRD nozzle penetrations through the underside of the reactor head.
   Note: At this point the accessible surfaces of the reactor head penetration areas will be encapsulated, with the exception of underside of the reactor head.
6. Using the Containment Building polar crane, lift the RVCH off the headstand and set it on a steel plate. Seal the seating surface with caulk, thereby completing the protection of the CRD penetration areas.
   Note: Insta-Cote ML-2 may be applied on the exterior surface.

HOLD POINT

Before proceeding, notify the NRC of the completion of the encapsulation process. Concurrence by the NRC is required prior to proceeding with the removal of the RVCH from the Containment Building.

REMOVAL OF THE RVCH FROM THE CONTAINMENT BUILDING

Perform the following steps:

1. Remove the RVCH from the Containment Building through the temporary access opening.
2. Move the RVCH into the Turbine Building train bay onto cribbing.
3. Install additional shielding over the support skirt and previously installed steel "top hat" using 2-inch steel (see attached drawing)
4. Install additional shielding under the RVCH by using a 4-inch steel plate bolted to the RVCH flange (see attached drawing).
5. Load the RVCH on to a low center flat railcar and secure in place.
6. Cover the RVCH with shrink-wrap or similar material for rail shipment to Envirocare of Utah, Inc.
7. Ensure proper shipping permits have been received and placards are attached to the rail car for shipment of the RVCH.

HOLD POINT

Before proceeding, notify the NRC of the completion of the shipping packaging process. Concurrence by the NRC is required prior to proceeding with the shipment of the RVCH.

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8. Ship the RVCH to Envirocare of Utah, Inc. at Clive, Utah.

MOBILIZATION FOR EXTRACTION OF PENETRATION AREAS

In parallel with removal and shipment of the RVCH, mobilize to perform the extraction of the penetration areas of Nozzles 2 and 46 at the Envirocare facility.
Perform the following steps:

1. Assign a Project Manager from FENOC for oversight of the remainder of the sample removal process. These responsibilities will include onsite management at the Envirocare facility.
2. Develop the Nozzle 2 and 46 penetration areas extraction plan based on input from the NRC and receive NRC concurrence with the extraction plan prior to its use (see Hold Point below).
3. Provide the necessary facilities at Envirocare for extraction of Nozzles 2 and 46 penetration areas. This includes all necessary structures and equipment to allow the RVCH to be unpacked and prepared for extraction of the two penetration areas.
4. Perform pre-deployment activities and as many onsite activities as possible prior to receipt of the RVCH, including relocating personnel and equipment to the Envirocare facility, in order to minimize time between receipt onsite of the RVCH and commencement of the penetration extraction process.

NOZZLE 2 AND 46 PENETRATION AREAS EXTRACTION

HOLD POINT

Obtain NRC concurrence on the extraction plan, including cutting methodology and area dimensions, prior to proceeding with the plan.

Perform the following steps:

1. Complete deployment activities, including equipment readiness, and process and craft qualifications.
2. Approve the final process procedures/documents for extraction of the penetration areas.
3. Remove the steel shielding, "top hat", and bottom cover plate to gain access to the nozzle penetration areas.
4. Perform a test cut on the RVCH near the previously cut out Nozzle 3 penetration area for final process demonstration.

HOLD POINT

Obtain NRC concurrence to proceed with the extraction of the penetration areas of Nozzles 2 and 46.

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5. Cut and extract the penetration areas of Nozzles 2 and 46.
6. Place the extracted penetration areas of Nozzles 2 and 46 in closed containers under control to prevent incursions.

7. Following the removal of the penetration areas of Nozzles 2 and 46, dispose of the RVCH at the Envirocare facility.

SHIPMENT OF THE EXTRACTED PENETRATION AREAS OF NOZZLES 2 AND 46 TO THE NRC-DESIGNATED FACILITY

HOLD POINT

Obtain NRC concurrence with the packaging and shipment plan prior to proceeding.

Perform the following step:

1. Ensure proper permits/documents are in order for shipment of the extracted penetration areas of Nozzles 2 and 46 to the facility designated by the NRC.
2. Ship the extracted penetration areas of Nozzles 2 and 46 to the facility designated by the NRC. This relinquishes control of these extracted areas to the NRC.

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