

~~EXEMPT #6#4~~

11/22/09

DRAFT PROLOG 1 OF 3

UPDATE @ 7:30 AM

Three Mile Island - Low level airborne radioactivity in reactor building - DRAFT

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Issue:

At approximately 1600 hours on Saturday afternoon, low-level airborne radioactivity unexpectedly increased in the reactor building with corresponding alarms on installed airborne monitoring AMS-4's.

Subsequent air samples inside the reactor building averaged 0.7 DAC in the "B" D-Ring and the 346' elevation.

Air samples taken at the construction opening noted positive activity at 0.226 DAC at 1615 hours. Subsequent air samples taken at the construction opening at 1830 hours were observed to be a factor of 10 lower at 0.02 DAC.

Air samples taken at the equipment hatch opening indicated no activity at 1932 hours.

**Immediate Actions taken include the following:**

The construction opening was covered with a large tarp within the hour and the reactor building personnel airlock was additionally covered.

The reactor building purge was validated to be in service as well as the Auxiliary Building ventilation.

Contamination surveys were conducted outside the reactor building construction opening and equipment hatch. No contamination was detected on the ground outside the RCA at either the construction opening or the equipment hatch.

Air flow was validated to flow inward at the equipment hatch with air flow into the RB. ?

Airflow at the construction opening was validated to be have an outward positive pressure.

Radiological Effluent Release Calculations were conducted from construction hatch opening air sample data with the following results:

→ A release was calculated to be 3.5 E-2 mrem which is 0.46% of the quarterly ODCM limit of 7.5 mrem and was determined to not be reportable. This analysis was based on the AMS-4 sample taken at the construction hatch opening. Isotopes of contribution were primarily Co-58 and Co-60, consistent with the plant mix.

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The ODCM Specialist has arrived and is currently performing confirmatory calculations with a follow-up Independent Verification to be performed by an Effluent Specialist from off-Site.

### **Current Reactor Building Contamination Survey Data:**

Comprehensive contamination and airborne samples have been taken through the last shift in the Reactor Building in both the "A" and "B" D-Rings. Air samples taken in the reactor building through the shift have validated no airborne levels < 0.3 DAC, and continue to show no airborne contamination at this time.

Hourly contamination surveys outside the reactor building during the past shift indicated no spread of contamination outside of the building.

Contamination levels in the RB on the hatch transfer system are 2 – 6 k/ dpm/100 cm<sup>2</sup>. This area is currently being surveyed for release following decontamination. Steam generator repainting activities have been selected versus hand wipe decontamination due to faster application times versus tested hand decontamination methods.

Detailed surveys and follow-up investigation have continued through the night to validate hepa and engineering control adequacy for work occurring on dayshift today.

A decontamination crew will be briefed to enter the reactor building this morning to initiate painting activities on the "A" steam generator. Spot decontamination of work locations in the D-Rings where higher contamination levels were identified is ongoing.

### **Initiating Event Investigation:**

The cause investigation tree was worked through the following 2 legs overnight.

(1). The first probability included welding activities on a small plug welded inside the skirt of on the bottom of the "B" generator. A hepa used during this work activity was found to have been connected via an extension cord to a tripped breaker on a power supply cart. It is not known when this hepa filter lost power due to the breaker trip.

Investigation will continue this morning with the RPT and the welder supporting this job to validate hepa placement and setup operability prior to work starting. A review of air samples did indicate the presence of airborne contamination up to 1.98 DAC fraction within the "B" steam generator skirt enclosure at the bottom of "B" steam generator on the welders breathing zone air sample.

(2). The second probability included work near the "A" cold leg supporting pipe end decon preparation activities. A wet vac was found near the work area with high contamination levels on the outside of the hose and the vacuum device. Investigations will continue this morning to continue to follow this fault tree to determine if it is a valid contributor.

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**Whole Body Count Results:**

All workers have been processed through the RCA.

A total of 151 WBC's have been completed using the bioassay process with the results being validated by the Radiological Technical Manager and Corporate RP. Final dose calculations will be completed following the scheduled follow-up whole body counts that will be completed over the next 48 hours.