

810.42703/0



Additional Event Description and Probable Consequences:

On Sunday, October 7, 1979, in the course of performing secondary system maintenance during a planned unit outage, a foreign object (hex nut) was discovered lodged in the internals of the main steam supply valve to the 3C moisture separator-reheater. Operation to place the reactor coolant system in cold shutdown (unplanned) was initiated to facilitate an investigation to determine the origin of the hex nut. On Monday, October 8, 1979, investigative efforts revealed that the nut was missing from the disc stud in the 3A main steam check valve (MSCV). The disc and disc stud were in the proper position and the valve was fully operable. The 3B and 3C MSCVs were inspected and the disc stud nuts were found in place although some distress was noted on the 3C lock washer.

During a reinspection of the locking device in November 1980, to evaluate its performance, the nut and washers were found to be missing from the 3A MSCV and the washers associated with the 3B and 3C MSCV showed signs of distress.

Additional Cause Description and Corrective Action:

The cause of the hex nut dislodging from the disc stud was failure of the washer beneath the hex nut and subsequent failure of the associated locking device. Vibration resulted in the hex nut "backing off" the disc stud. The hex nut was replaced on the 3A MSCV and an improved locking device was installed on all three MSCVs. This improved locking device provided for changing the nut material to permit it to be fillet welded to the disc stud. Additionally, the main steam isolation valves (MSIVs) were inspected during the refueling outage in the subsequent month.

During the reassembly of the MSCVs following the inspection and repair described above, 24 studs (securing the valve bonnet to the valve body) on the 3A MSCV and 10 studs on the 3C MSCV were overtightened. The overtightening resulted from personnel error in reading the pressure gauge scale on the hydraulic torque device. The affected studs were replaced with new studs which meet or exceed original design requirements. Maintenance personnel have been reinstructed in the proper use of this type of torque device.

Subsequent to discovery of additional distress (in November 1980) in the area of the improved locking device, temporary repairs were effected. A plant change/modification was prepared for installing new disc studs on both the MSIVs and MSCVs. A nut will be secured to each of the new studs by use of two pins inserted axially between the nut and stud. Pending approval of the modification package and receipt of material, the new locking device will be installed. The implementation schedule is tentatively set for September 1981.

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