



Description of Event

At 2314 on April 3, 1980, a Safety Injection occurred due to high steam line flow coincident with low steam line pressure. This event resulted from the full closure of main steam trip valve TV-MS101A during periodic part-stroke exercising of the valve.

During the cooldown, the greatest temperature drop occurred in Loop C hot leg. The Post Accident Analysis Log (PAAL) indicated a 72°F temperature decrease which occurred during the first 15 minutes of the event. There was no release of radioactivity during the transient.

As a result of the Safety Injection, the contents of the Boron Injection Tank (BIT) were flushed to the Reactor Coolant System which caused the concentration of the BIT to fall below the Tech. Spec. limit of 20,000 PPM borated water. Although the Tech. Spec. Limiting Condition for Operation was not met following the event, the BIT did perform its intended function.

As a result of the Safety Injection, the Refueling Water Storage Tank (RWST) level dropped below the 450,000 gallon limit required by T.S. 3.1.2.8.b.1 because the safety injection pumps draw suction from this tank to provide for the cold leg injection. Therefore, the RWST performed its function as intended.

As a result of the Safety Injection, the level in the Emergency Condensate Storage Tank (ECST) went below the value given in T.S. 3.7.1.3. This is an expected occurrence following an ECCS actuation since the auxiliary feedwater pumps take suction from this tank and start on a SI Signal to feed water to the steam generators. The ECST performed its design function.

As a result of the Safety Injection, the control room pressurization system air bottles depressurized to pressurize the control room. During the event the air bank pressure dropped below the value given in T.S. 4.7.7.2.a. This is an expected event following an ECCS actuation and the air bottles performed their intended function.

During the Safety Injection the following unexpected events occurred which are contrary to Technical Specifications and/or the FSAR:

During recovery from the transient, operations personnel noticed that the main steam trip valves reopened following reset of the main steam line isolation signal. This condition appears to be inconsistent with FSAR Comment 7.4 in that two operator actions are required to return a safety system to a non-safety mode. This condition is also contrary to FSAR Section 7.3.1.3.5, page 7.3-36 and exists on Unit 2.

Also, upon receiving the Safety Injection Signal, emergency diesel generator 1H automatically started as designed; however, it tripped shortly thereafter on overspeed. The trip was reset and the diesel was successfully restarted to verify operability.

The ECCS actuation is reportable per T.S. 3.5.2 and 6.9.2. However, Regulatory Guide 1.16 states that ECCS actuations are reportable under Unit 1 T.S. 6.9.1.8.i which requires a 24 hour notice and written follow up. This report is intended to meet the additional requirements of the 90 day report for T.S. 6.9.2.

The other events included in this discussion, with the exception of the main steam trip valve reset problem, are reportable as 30 day items by T.S. 6.9.1.9.b. The potential design error in the main steam trip valve control circuit is reportable pursuant to T.S. 6.9.1.8.i.

This is the fifth actuation of the Emergency Core Cooling System reportable under T.S. 6.9.2.

#### Probable Consequences of Occurrence

The purpose of the Emergency Core Cooling System is to ensure adequate cooling of the reactor in the event of a loss of coolant accident. Although the safety injection system performed its intended function to inject borated water into the Reactor Coolant System and the transient was not severe, an actual accident condition did not exist and therefore the SI was not required. As a result, the health and safety of the general public were not affected. This event is generic to Unit 2 since it uses identical main steam trip valves.

#### Cause of Event

The cause of the Safety Injection was high steam line flow coincident with low steam line pressure which resulted when main steam trip valve TV-MS101A closed during part-stroke exercising due to the test being performed at full steam flow conditions. It is believed that the high steam flow acted to pull the valve disc down so when the air pressure in the valve's pneumatic cylinders was slightly reduced, by the partial closure test, the trip valve closed.

The low levels in the RWST and ECST, the loss of boric acid from the BIT, and the loss of air pressure in the control room air bottles are all normal results of a Safety Injection and are expected to occur.

The main steam trip valves reopened upon reset of the main steam line isolation signal because of a potential design error in the control circuit for the trip valves.

The 1H diesel generator tripped on overspeed following its automatic start because the governor failed to operate properly. Possible sticking or worn parts caused the governor to operate sluggishly.

#### Immediate Corrective Action

The Safety Injection Signal was reset at 2318 and Safety Injection was terminated by the control room operators in accordance with the applicable Emergency Procedure at 2324 when Reactor Coolant System letdown was established and cold leg injection flow was secured.

The operators refilled the RWST and ECST, reborated the BIT, and repressurized the control room bottled air system to their proper limits as required by the appropriate Technical Specification ACTION statements.

The governor on diesel generator 1H was replaced and several adjustments were made by the vendor representative. The diesel generator was then tested satisfactorily.

#### Scheduled Corrective Action

A design change has been initiated to correct the design error in the main steam trip valve control circuit so as to conform with all FSAR requirements. The necessary changes to the circuitry will be implemented upon completion and approval of the design change package. Operations was informed of the deficiency by a standing order with appropriate cautions. The 1H diesel generator surveillance schedule was changed to require a full surveillance test every 3 days instead of monthly. This increased frequency will be maintained for at least 10 starts minimum or until reliability is proven.

#### Actions Taken to Prevent Recurrence

The periodic test procedure used to demonstrate the main steam trip valves operable by part-stroke exercising each valve at least once every 92 days has been deleted from the periodic test program after Vepco was granted relief from the required testing on an interim basis. The Unit 2 procedure has been deleted as well.