

An analysis of condenser hotwell/feedwater system characteristics has been completed. As a result of this analysis, a modification was installed in November 1990, to provide an automatic reduction in reactor power in the event of a load rejection. A reliability based recirculation pump trip scheme designed to trip one selected reactor recirculation pump (providing both are in service) upon load rejection provides this automatic power reduction. Tripping of one reactor recirculation pump will lower reactor power by approximately 40% and place the reactor at a power level near that for which a successful load rejection has been demonstrated. Computer modeling of the plant secondary systems indicate that tripping of one recirculation pump has a beneficial effect on keeping feedwater available during such transients.

Automatic tripping of one recirculation pump acts to 1) lower the reactor power and associated steam flow to the turbine/main condenser, 2) lessen the perturbations in the main condenser associated with load rejection and 3) reduce feedwater flow requirements. These three resultant actions tend to eliminate secondary side instabilities inherent to load rejections occurring at higher power levels. This change was completed via Facility Change FC-664.

As an enhancement to the recirc pump trip modification, FC-680 was initiated which replaced the then existing manual valve VTG-144 with automatically controlled CV-4136. The original purpose of VTG-144 was to allow an additional amount of sealing steam for the turbine seals in the event that leakage was in excess of the steam seal regulator capacity. During low power operation (about 10 MWe or less), the position of VTG-144 was shown to have an adverse effect on condenser vacuum. To preclude a loss of vacuum causing a loss of the secondary side the manual valve was replaced with an automatic valve which receives a close signal upon a load rejection or closure of the main steam stop valve.

#### 10.2.5 TURBINE ROTOR DISC INTEGRITY AND OVERSPEED PROTECTION

An evaluation of the turbine-generator was completed as part of the Systematic Evaluation Program (SEP) Topic III-4.B - Turbine Missiles. Results and conclusions in regard to turbine rotor integrity and adequacy of overspeed protection are provided in Section 3.5 of this Updated FHSR along with the turbine rotor surveillance schedule basis.

#### 10.2.6 TURBINE STOP VALVE

The turbine emergency stop valve is an oil operated, spring closed valve controlled from the following devices:

1. Mechanical Low Vacuum Trip
2. Electrical Trips
  - a. Turbine Thrust Bearing Failure
  - b. Hand Trip in Control Room
  - c. Condenser Low Vacuum Switch
  - d. Reactor Scram Auxiliary
  - e. Generator Lockout Relay
  - f. Low Lube Oil Pressure Switch