

PLANT SYSTEMS

TURBINE OVERSPEED

LIMITING CONDITION FOR OPERATION

3.7.1.7 At least one turbine overspeed protection system shall be OPERABLE.

APPLICABILITY: MODE 1, 2 and 3

ACTION:

With the above required turbine overspeed protection system inoperable, within 6 hours either restore the system to OPERABLE status or isolate the turbine from the steam supply.

SURVEILLANCE REQUIREMENTS

4.7.1.7.1 The provisions of Specification 4.0.4 are not applicable.

4.7.1.7.2 The above required turbine overspeed protection system shall be demonstrated OPERABLE:

- a. By cycling each of the following valves through one complete cycle of full travel and verifying movement of each of the valves through one complete cycle by direct observation:
 1. Four Turbine Throttle valves at least once per 31 days,
 2. Four Turbine Governor valves at least once per 31 days, *
 3. Four Turbine Reheat Stop valves at least once per 18 months, and
 4. Four Turbine Reheat Intercept valves at least once per 18 months.
- b. At least once per 18 months, by performance of CHANNEL CALIBRATION on the turbine overspeed protection instruments.
- c. At least once per 40 months **, by disassembly of at least one of each of the above valves and performing a visual and surface inspection of all valve seats, disks and stems and verifying no unacceptable flaws or corrosion. If unacceptable flaws or excessive corrosion are found, all other valves of that type shall be inspected unless the nature of the problem can be attributed to a service condition specific to that valve.

* Testing of the turbine governor valves may be suspended during end-of-cycle power coastdown operation between 835 MWe and 386 MWe.

** For reheat stop and reheat intercept valves, the inspection cycle may be increased to a maximum of once per 60 months provided there is no indication of operational distress.

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ATTACHMENT 3

SIGNIFICANT HAZARDS CONSIDERATION

VIRGINIA ELECTRIC AND POWER COMPANY

SIGNIFICANT HAZARDS CONSIDERATION

The Technical Specifications surveillance requirements currently require testing and inspection of the Turbine Overspeed Protection System control valves to ensure their operability to prevent overspeeding of the turbine. The proposed change would increase the surveillance test interval for the turbine reheat stop and intercept valves to once per 18 months and extend the visual and surface inspection interval to 60 months. The proposed change would also remove the requirement to perform additional visual and surface inspections on the remaining turbine overspeed protection system control valves of that type when unacceptable flaws or excessive corrosion are identified which can be directly attributed to a service condition specific to the inspected valve.

The turbine control valves have been tested monthly with no failures attributable to valve or control system malfunctions. In addition, operational experience has shown that the valves have not failed to close in response to turbine trip demands nor experienced valve stem sticking while the units were carrying load.

Westinghouse Electric Corporation performed a probabilistic evaluation of the probability of generating turbine missiles as a direct function of the reduced testing frequency of the reheat stop and intercept valves. The evaluation focused on the two three overspeed events (e.g., design and intermediate overspeed) defined in WCAP-11525 that are affected by the test intervals of the reheat stop and intercept valves. The third overspeed event (destructive overspeed) does not result from failures of these valves, therefore, it was not included in the evaluation. The North Anna turbines are also of the heavy hub design which reduces the probability that the turbine generated missiles from disk failure resulting from a destructive overspeed.

It was determined by the Westinghouse probabilistic evaluation that with an eighteen month test interval for the reheat stop and intercept valves, the total turbine missile ejection probability for North Anna Units 1 and 2 meets the applicable turbine system reliability acceptance criteria.

Virginia Electric and Power Company has reviewed the proposed Technical Specification changes against the requirements of 10 CFR 50.92 and has determined that the proposed changes would not pose a significant hazards consideration.

Specifically, operation of the North Anna Power Station in accordance with the proposed Technical Specifications changes will not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

No new or unique accident precursors are introduced by these changes in surveillance requirements. The probability of turbine missile ejection with an extended 18-month test interval for the reheat stop and intercept valves has been determined to be within the applicable acceptance criteria.

The heavy hub design of the turbine rotors provides further assurance that the probability of the ejection of destructive missiles remains minimal.

Based upon the results of the probabilistic evaluation, the probability of a turbine generated missile is less than 10^{-5} per year which the Commission has endorsed as the acceptable level for turbine operation.

The reheat stop and intercept valve inspection interval extension and the elimination of the additional visual/surface inspections do not change the design, operation, or failure modes of the valves and other components in the turbine overspeed protection system.

Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The demonstrated high reliability of the turbine reheat stop and intercept valves and the verification of the operability of the other turbine control valves provide adequate assurance that the turbine overspeed protection system will operate as designed, if needed. Turbine reheat stop and intercept valve testing performed to date has demonstrated the reliability of these valves. In addition, the operability of the other turbine valves (i.e., turbine throttle valves and governor valves) will continue to be verified every 31 days or as required by the Technical Specifications.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

Since the implementation of the proposed change to the surveillance requirements will not require hardware modifications (i.e., alterations to plant configuration), operation of the facilities with these proposed Technical Specifications does not create the possibility for any new or different kind of accident which has not already been evaluated in the Updated Final Safety Analysis Report (UFSAR). In addition, the results of the probabilistic evaluation indicate that no additional transients have been introduced.

The proposed revision to the Technical Specifications will not result in any physical alteration to any plant system, nor would there be a change in the method by which any safety-related system performs its function. The design and operation of the turbine overspeed protection and turbine control systems are not being changed.

The proposed Technical Specifications changes do not affect the design, operation, or failure modes of the valves and other components of the turbine overspeed protection system. Therefore, the proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed changes would not reduce the margin of safety as defined in the basis for any Technical Specifications. The design and operation of the turbine overspeed protection and turbine control systems are not being changed and the operability of the turbine reheat stop and intercept valves will be demonstrated on a refueling outage basis. In addition, the results of the accident analyses which are documented in the UFSAR continue to bound operation under the proposed changes, so that there is no safety margin reduction. Therefore, the proposed change does not involve a significant reduction in a margin of safety.