

Attachment 1

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INSTRUMENTATION

3/4.3.4 TURBINE OVERSPEED PROTECTION

LIMITING CONDITION FOR OPERATION

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

APPLICABILITY: MODES 1, 2* and 3*.

ACTION:

- a. With one stop valve or one governor valve per high pressure turbine steam line inoperable and/or with one reheat stop valve or one reheat intercept valve per low pressure turbine steam line inoperable, restore the inoperable valve(s) to OPERABLE status within 72 hours, or close at least one valve in the affected steam line(s) or isolate the turbine from the steam supply within the next 6 hours.
- b. With the above required turbine overspeed protection system otherwise inoperable, within 6 hours isolate the turbine from the steam supply.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.4.1 The provisions of Specification 4.0.4 are not applicable.

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

- a. [#] At least once per 7 days when the DEH valve test feature is OPERABLE by cycling each of the following valves through at least one complete cycle from the running position.
 1. Four high pressure turbine stop valves.
 2. Four high pressure turbine governor valves.
 3. Four low pressure turbine reheat stop valves.
 4. Four low pressure turbine reheat intercept valves.
- b. [#] If the DEH valve test feature is inoperable, restore the test feature to OPERABLE status as soon as possible and verify that the governor valves are capable of valve motion at least once per 7 days.

*Specification not applicable with all main steam isolation valves and associated bypass valves in the closed position and all other steam flow paths to the turbine isolated.

The provisions of Surveillance Requirements 4.3.4.2.a and 4.3.4.2.b are NOT applicable during the remainder of the first fuel cycle.

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- b. With the above required turbine overspeed protection system otherwise inoperable, within 6 hours isolate the turbine from the steam supply.
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- b.# If the DEH valve test feature is inoperable, restore the test feature to OPERABLE status as soon as possible and verify that the governor valves are capable of valve motion at least once per 7 days.

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#The provisions of Surveillance Requirements 4.3.4.2.a and 4.3.4.2.b are not applicable during the remainder of the first refueling cycle.

Attachment 2
Safety Evaluation For One-Time Change
of Unit 2 Technical Specification 3/4.3.4

Background

Technical Specification 3/4.3.4 currently specifies the periodic performance of turbine valve tests to demonstrate valve operability. The surveillance requirements necessitate all turbine stop, governor, reheat stop and reheat intercept valves to be stroked through their complete cycle from their operational position. Alabama Power Company requests a one-time change to Technical Specification 4.3.4.2.a and 4.3.4.2.b to waive turbine valve testing during the remainder of the first fuel cycle for Unit 2.

References:

- 1) FNP Unit 2 Technical Specification 3/4.3.4

Bases

Steam enters the high pressure turbine through four turbine stop valves in series with four governor valves. Steam exits the high pressure turbine, flows through the moisture separator reheaters, and enters the low pressure turbines through four reheat stop valves in series with four reheat intercept valves. The primary turbine overspeed control trips the turbine at 103% of rated shaft speed; the first backup at 111%; the second backup at 111.5%. This redundancy in both turbine valves and overspeed protection controls provides high assurance that turbine speed control will be maintained.

In order to perform the turbine valve tests required by the technical specifications, the unit must be reduced to approximately 85% power. As the reactor core nears end-of-life, cycling of the nuclear steam supply system imposes operational difficulties in maintaining the axial flux difference within the technical specification target band limitation and results in a potential restriction of 50% power for 24 hours. The return to full power following turbine valve tests performed near the end of reactor core life necessitates the processing of significant amounts (i.e., 20,000 gallons) of reactor coolant. In returning to full power, operational difficulties also occur from overcoming negative reactivity due to xenon transients. These power transients and the potential for delays in the return to power from turbine valve tests performed during the end of reactor core life are unnecessary because the turbine valves and overspeed protection system have been demonstrated as highly reliable.

Alabama Power Company has reviewed the results of the weekly performances of the Unit 2 turbine valve technical specification surveillance requirement and past performance of valve operation during Unit 2 turbine trips and has determined that no turbine valve has failed to close on demand. Additionally, turbine valves on Unit 1, identical models to Unit 2, have never failed to fully close on demand during associated turbine valve tests and turbine trips. These results are based on 40 turbine trips and 69 valve tests for Unit 2 and 118 turbine trips and over 90 valve tests for Unit 1. This history of trouble-free valve operation provides added assurance of the dependability of these valves and the redundant overspeed protection systems. In addition to the turbine stop and governor valves, the main steam isolation valves, which are periodically tested, provide another mechanism to terminate steam flow to the turbine.

Since Alabama Power Company has demonstrated the high reliability of the turbine overspeed protection system and turbine valves, this proposed one-time change does not represent a risk to the health and safety of the public nor jeopardizes the safe operation of the Farley Nuclear Plant - Unit 2. In order to avoid the unnecessary cycling of the nuclear steam supply system and the potential delays in the return to power from the turbine valve tests, Alabama Power Company requests a one-time change to Technical Specification 4.3.4.2.a and 4.3.4.2.b to waive turbine valve testing during the remainder of the first fuel cycle for Unit 2. The Unit 2 first fuel cycle is expected to end in late October, and this proposed one-time change would waive approximately two turbine valve tests required by the current technical specifications.

Conclusions

The proposed one-time change to Technical Specification 3/4.3.4 does not involve an unreviewed safety question as defined by 10 CFR 50.59.