

## Duke Energy DOCUMENT TRANSMITTAL FORM

Facility: **CATAWBA NUCLEAR STATION**  
SUBJECT  
**SLC Manual Revision to 16.7-5 and LOES**

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Remarks:

A-001  
NMR

Remove and Insert

Replace the following page(s) of Catawba Nuclear Station Selected Licensee Commitments (SLC) Manual with the attached revised page(s). The revised page(s) are identified by Section number and contains marginal lines indicating the areas of change.

**REMOVE THESE PAGES**

**INSERT THESE PAGES**

**LIST OF EFFECTIVE SECTIONS**

Pages 1-5  
Revision 104

Pages 1-5  
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**TAB 16.7**

16.7-5, Pages 1-3  
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If you have any questions concerning the contents of this Catawba Nuclear Station Selected Licensee Commitments (SLC) Manual update, please contact Nicole Edwards (704)382-6669.

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16.7 INSTRUMENTATION

16.7-5 Turbine Overspeed Protection

COMMITMENT      At least one Turbine Overspeed Protection System shall be FUNCTIONAL.

APPLICABILITY:    MODES 1, 2, and 3.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A.    One stop valve or one control valve per high pressure turbine steam line non-functional.	A.1    Restore non-functional valve(s) to FUNCTIONAL status.	72 hours
	<u>OR</u>	
	A.2    Close at least one valve in affected steam line(s).	78 hours
	<u>OR</u>	
	A.3    Isolate the turbine from the steam supply.	78 hours
B.    One intermediate stop valve or one intercept valve per low pressure turbine steam line non-functional.	B.1    Restore non-functional valve(s) to FUNCTIONAL status.	72 hours
	<u>OR</u>	
	B.2    Close at least one valve in affected steam line(s).	78 hours
	<u>OR</u>	
	B.3    Isolate the turbine from the steam supply.	78 hours

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Turbine Overspeed Protection System non-functional for reasons other than Condition A or B.	C.1 Isolate the turbine from the steam supply.	6 hours

TESTING REQUIREMENTS

TEST	FREQUENCY
<p>TR 16.7-5-1 -----NOTES-----</p> <ol style="list-style-type: none"> <li>1. This TR shall be performed in MODE 1 or in MODE 2 with the turbine operating.</li> <li>2. Not required to be performed until 24 hours after each valve is opened.</li> </ol> <p>-----</p> <p>Cycle while performing a direct observation of the four high pressure turbine stop valves, six low pressure turbine intermediate stop valves, six low pressure turbine intercept valves, and four high pressure turbine control valves, through one complete cycle from the running position.</p>	In accordance with SLC 16.7-5 Bases
TR 16.7-5-2 Perform CHANNEL CALIBRATION.	18 months

(continued)

TEST	FREQUENCY
TR 16.7-5-3 Disassemble at least one each of the four high pressure turbine stop valves, six low pressure turbine intermediate stop valves, six low pressure turbine intercept valves, and four high pressure turbine control valves, and perform a visual and surface inspection of valve seats, disks, and stems, and verify no unacceptable flaws or corrosion.	54 months
TR 16.7-5-4 Perform mechanical trip testing.	In accordance with SLC 16.7-5 Bases.
TR 16.7-5-5 Perform electrical trip testing.	In accordance with SLC 16.7-5 Bases

**BASES**

This COMMITMENT is provided to ensure that the Turbine Overspeed Protection instrumentation and the turbine speed control valves are FUNCTIONAL and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety related components, equipment, or structures.

The term "Isolate the turbine from the steam supply" used in Required Actions A.3, B.3, and C.1 can be met in several ways. These include: Maintaining the turbine in a tripped condition; or Hydraulically gagging all four main stop valves closed; or Hydraulically gagging all four main control valves closed; or Closing the main steam isolation valves and main steam isolation valve bypass valves.

Calculation CNC 1200.00-00-0006 provides qualitative and quantitative assessment for interval extension on Turbine Valve Movement Testing (TVMT). The calculation concludes that it is allowable to have a maximum 18-month TVMT interval for HP Stop Valves, HP Control Valves and LP Combined Intermediate Valves, based on main turbine missile probabilities. It is desired to incrementally extend the current test frequency from 4 months to 18 months based on two successful tests at each extended test interval no greater than half the previous test interval (e.g. the 4-month frequency would be extended to 6-months; the 6-month interval would be extended to 9 months and the 9 month frequency to 12 months, the 12 month frequency to 15 months and finally the 15 month interval to 18 months). The other recommendation is that CNS trend EHC fluid quality measurements to ensure fluid quality remains within acceptable limits. CNS currently takes Monthly samples and verifies EHC fluid is within OEM recommended limits (PMRQs 02031192-02 and

BASES (continued)

02031193-02). Both CNS units start at a 4M frequency for all Turbine Valve Movement Testing, within OEM acceptable limits. Extending TVMT frequencies through calculation CNC 1200.00-00-0006, the TVMT PM strategy is to extend valve testing out in 3 month increments after a minimum of 2 iterations. These TVMT intervals may be increased until the frequency reaches a maximum of 18 months between TVMT tests. The testing frequencies will be extended in accordance with the strategy given below until the maximum frequency is reached.

4M to 6M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Valve Movement Tests at this frequency)

6M to 9M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Valve Movement Tests at this frequency)

9M to 12M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Valve Movement Tests at this frequency)

12M to 15M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Valve Movement Tests at this frequency)

15M to 18M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Valve Movement Tests at this frequency)

PMRQs that document current frequency and drive execution:

02031173-01 – PT/1/A/4250/02B MAIN TURB VALVE MOV'T TEST

02031173-02 – PT/1/A/4250/02C TURBINE CONTROL VALVE MOV'T TEST

02031172-03 – PT/2/A/4250/02B MAIN TURB VALVE MOVEMENT TEST

02031172-04 – PT/2/A/4250/02C TURBINE CONTROL VALVE MOVEMENT TEST

Calculation CNC 1200.00-00-0006 also performed analysis on extending out mechanical and electrical (backup) trip testing, based on turbine missile probabilities. The calculation concludes that a maximum frequency of 2-Months on mechanical trip testing and 1-Month for electrical trip testing is allowable. The maximum extensions for trip testing are based on requirements that CNS extends the interval out in steps and no more than double of the previous test interval. The other recommendation is that CNS trend EHC fluid quality measurements to ensure fluid quality remains within acceptable limits. Extending trip test frequencies through calculation CNC 1200.00-00-0006, the Turbine Trip test PM strategy is to extend trip testing out no more than double of the previous test interval after a minimum of 2 iterations. The testing frequencies will be extended in accordance with the strategy given below until the maximum frequency is reached.

1W to 2W – Allow for testing at this interval and collect data (a minimum of 2 Turbine Trip Tests at this frequency)

2W to 1M – Allow for testing at this interval and collect data (a minimum of 2 Turbine Trip Tests at this frequency)

1M to 2M – This would only be optional for the mechanical trip testing upon a minimum of 2 successful mechanical trip tests.

BASES (continued)

PMRQs that document current frequency and drive execution:  
02031173-04 – PT/1/B/4250/02A MAIN TURBINE WEEKLY TRIP TEST  
02031172-01 – PT/2/B/4250/02A MAIN TURBINE WEEKLY TRIP TEST

REFERENCES

1. CNC 1200.00-00-0006 Rev 000 – Catawba Turbine Overspeed Protection System Maintenance and Test Interval Extension Assessment.
2. CNM 1200.00-0212.001 Rev 051 – Turbine Instruction Manual.