

ATTACHMENT 1
SURRY POWER STATION
PROPOSED TECHNICAL SPECIFICATION CHANGES
NON-ESSENTIAL SERVICE WATER ISOLATION ACTUATION LOGIC

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TABLE 3.7-2 (Continued)

ENGINEERED SAFEGUARDS ACTION
INSTRUMENT OPERATING CONDITIONS

<u>FUNCTIONAL UNIT</u>	<u>TOTAL NUMBER OF CHANNELS</u>	<u>MINIMUM OPERABLE CHANNELS</u>	<u>CHANNELS TO TRIP</u>	<u>PERMISSIBLE BYPASS CONDITION</u>	<u>OPERATOR ACTIONS</u>
AUXILIARY FEEDWATER (continued)					
e. Trip of main feedwater pumps - start motor driven pumps	2/MFW pump	1/MFW pump	2-1 each MFW pump		21
f. Automatic actuation logic	2	2	1		22
4. LOSS OF POWER					
a. 4.16 kv emergency bus undervoltage (loss of voltage)	3/bus	2/bus	2/bus		20
b. 4.16 kv emergency bus undervoltage (degraded voltage)	3/bus	2/bus	2/bus		20
5. NON-ESSENTIAL SERVICE WATER ISOLATION					
a. Low intake canal level	4	3	3		20
b. Automatic actuation logic	2	2	1		14
6. ENGINEERED SAFEGUARDS ACTUATION INTERLOCKS - Note A					
a. Pressurizer pressure, P-11	3	2	2		23
b. Low-low T _{avg} , P-12	3	2	2		23
c. Reactor trip, P-4	2	2	1		24

Note A - Engineered Safeguards Actuation Interlocks are described in Table 4.1-A

TABLE 4.1-1 (Continued)

MINIMUM FREQUENCIES FOR CHECK, CALIBRATIONS, AND TEST OF INSTRUMENT CHANNELS

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
39. Steam/Feedwater Flow and Low S/G Water Level	S	R	M	
40. Non-Essential Service Water Isolation (See Footnote 1)				
a. Low intake canal level	D	R	Q	
b. Automatic actuation logic	N.A.	N.A.	M	
41. Turbine Trip and Feedwater Isolation				
a. Steam generator water level high	S	R	M	
b. Automatic actuation logic and actuation relay	N.A.	R	M(1)	1) Automatic actuation logic only, actuation relays tested each refueling
42. Reactor Trip System Interlocks				
a. Intermediate range neutron flux, P-6	N.A.	R(3)	M(4)	3) Neutron detectors may be excluded from the calibration
b. Low power reactor trips block, P-7	N.A.	R(3)	M(4)	4) With power greater than or equal to the interlock setpoint, the required test shall consist of verifying that the interlock is in the required state by observing the permissive annunciator window
c. Power range neutron flux, P-8	N.A.	R(3)	M(4)	
d. Power range neutron flux, P-10	N.A.	R(3)	M(4)	
e. Turbine impulse pressure	N.A.	R	R	

Footnote 1:

- Check Consists of verifying for an indicated intake canal level greater than 23'-6" that all four low level sensor channel alarms are not in an alarm state.
- Calibration Consists of uncovering the level sensor and measuring the time response and voltage signals for the immersed and dry conditions. It also verifies proper action of instrument channel from sensor to electronics to channel output relays and annunciator. Only the two available sensors on the shutdown unit would be tested.
- Tests
- 1) The automatic actuation logic test verifies the three out of four logic development for each train by using the channel test switches for that train.
 - 2) Low intake canal level test verifies that electronics module responds properly to a superimposed differential millivolt signal which is equivalent to the sensor detecting a "dry" condition.

ATTACHMENT 2
SURRY POWER STATION
NON-ESSENTIAL SERVICE WATER ISOLATION ACTUATION LOGIC
DISCUSSION OF CHANGES AND
SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

DISCUSSION OF CHANGES

INTRODUCTION

Technical Specification Table 3.7-2, Item 5, establishes the operability requirements for the non-essential service water isolation function. Technical Specification Table 4.1-1, Item 40, establishes the frequency of routine surveillance testing. However, a recent Technical Specification Amendment (Nos. 165/164), dated December 30, 1991, inadvertently eliminated the permissible bypass condition for performance of the actuation logic surveillance testing. These proposed Technical Specification changes will provide specific operability requirements for the actuation logic and, as part of the associated action statement, will reinstate the permissible bypass condition.

BACKGROUND

Technical Specification Amendment Nos. 130/130, dated August 16, 1989, incorporated operability and surveillance requirements for the new canal level monitoring system into Technical Specification Table 3.7-2 as Item 5 and Table 4.1-1 as Item 40, respectively. The surveillance requirements include a monthly logic check, quarterly electronic test, and a refueling calibration. In order to perform the required surveillance testing of the logic, a permissible bypass condition was established in Technical Specification Amendment Nos. 130/130, which allowed a train of the actuation logic to be blocked for a period not to exceed two hours.

Subsequently, in Amendment Nos. 165/164, dated December 30, 1991, Technical Specification Tables 3.7-2 and 3.7-3 were reformatted and revised in accordance with WCAP 10271 and Supplements, entitled "Evaluation of the Surveillance Frequencies and the Out of Service Times for the Engineered Safety Features Actuation System," and the associated NRC Safety Evaluation Reports, dated February 22, 1989 and April 30, 1990. Technical Specification Amendment Nos. 165/164 approved the following changes:

- The "actuation logic" and an appropriate action statement for each safety function.
- A four hour allowed outage time for analog channel testing.

- An eight hour allowed outage time for testing the relay logic trains.
- A twelve hour allowed outage time for maintenance.
- Six hours to place an inoperable channel in trip.

However, the proposed Technical Specification changes for Amendment Nos. 165/164 inadvertently omitted the permissible bypass condition for actuation logic testing for the non-essential service water isolation function. In addition, the operability requirements for the actuation logic were not specifically included for the non-essential service water isolation function.

SPECIFIC CHANGES

The proposed changes to Technical Specification Table 3.7-2, Item 5, "NON-ESSENTIAL SERVICE WATER," include operability requirements for the actuation logic. Specifically, Item 5.b, "Automatic actuation logic," is being added to indicate total number of channels, minimum operable channels, channels to trip, and Operator Action 14. The action statement will require the unit to be placed in hot shutdown within twelve hours when the minimum channels operable requirement is not met and allow one channel of the actuation logic to be bypassed for up to eight hours for surveillance testing. These provisions are consistent with WCAP 10271, which was approved by the NRC.

The proposed changes to Technical Specification Table 4.1-1, Item 40, "Intake Canal Low," are for clarity and consistency with the rest of Table 4.1-1, as well as with the comparable item in Table 3.7-2.

SAFETY SIGNIFICANCE

The plant and the non-essential service water isolation instrumentation are not being operated in a different manner. Establishing specific operability requirements for the actuation logic and providing an action statement with increased time limits does not change the probability of occurrence or the consequences of any accident previously evaluated. Furthermore, these changes do not create the possibility for a malfunction or an accident different than that previously evaluated in the UFSAR. Therefore, no new

accident precursors are being generated. The operability requirements for non-essential service water isolation function have not changed and the same level of protection is being maintained. Thus, there is no impact on any margin of safety as defined in the Basis Section of any Technical Specification.

The only issue considered unreviewed is the potential for a small increase in the probability of a malfunction of equipment important to safety. This potential is created by the increases in the allowed outage time and testing time for a single channel of automatic actuation logic for non-essential service water isolation. The increases in the allowed outage time and surveillance testing time may slightly increase the probability that the related actuation logic would be unavailable to mitigate the design base loss of intake canal inventory. This creates an unreviewed safety question, since the probability of malfunction of equipment important to safety may be increased. However, the increase is not significant. The twelve hour allowed outage time and eight hour allowance for surveillance of an actuation logic channel are consistent with WCAP 10271 and Supplements, entitled "Evaluation of the Surveillance Frequencies and the Out of Service Times for the Engineered Safety Features Actuation System," and the associated NRC Safety Evaluation Reports, dated February 22, 1989 and April 30, 1990. This increase in allowed outage time and surveillance testing time was previously approved by the NRC for the safety injection and containment spray actuation logic in Amendment Nos. 165/164. The safety injection and containment spray actuation logic provisions, in conjunction with other relaxations to the engineered safety features instrumentation Technical Specifications, resulted in an insignificant increase in the probability of core damage. Any effect of the presently proposed changes on the probability of core damage is enveloped by the previous assessment which was reviewed and accounted for in Amendment Nos. 165/164. Therefore, the proposed Technical Specification changes are concluded to be of negligible safety significance.

SIGNIFICANT HAZARDS CONSIDERATION

Virginia Electric and Power Company has reviewed the proposed changes against the criteria of 10 CFR 50.92 and has concluded that the changes as proposed do not pose a significant hazards consideration. Specifically, operation and maintenance of the non-essential service water isolation actuation logic as defined by the new action statement will not:

1. Involve a significant increase in the probability of occurrence or consequences of any accident previously evaluated. The plant is not being operated in a different manner due to the modified operability requirements and action statement for the non-essential service water isolation actuation logic. The probability of occurrence of any accident previously analyzed in the UFSAR is not increased. There is no effect on any mechanism which could initiate a previously analyzed accident. The modified operability requirements and action statement do not impact the consequences of any accident previously identified in the UFSAR. Emergency Operating Procedures require that operators monitor intake canal level and manually isolate non-essential service water loads if automatic isolation does not occur. However, the probability of a malfunction of equipment important to safety is potentially increased. Specifically, the increase in the allowed outage time and surveillance testing time may slightly increase the probability that this logic would be unavailable to mitigate the design base loss of intake canal inventory. However, this increase in malfunction probability is not significant. The twelve hour allowed outage time and eight hour allowance for surveillance time of an actuation logic channel are consistent with WCAP 10271 and Supplements, entitled "Evaluation of the Surveillance Frequencies and the Out of Service Times for the Engineered Safety Features Actuation System," and the associated NRC Safety Evaluation Reports, dated February 22, 1989 and April 30, 1990. This increase in allowed outage time and surveillance testing time was previously approved by the NRC for the safety injection and containment spray actuation logic in Amendment Nos. 165/164. The safety injection and containment spray actuation logic provisions, in conjunction with other relaxations to the engineered safety features instrumentation Technical Specifications, resulted in an insignificant increase in the probability of core damage. Any effect of the presently proposed changes on the probability of core damage is enveloped by the previous assessment which was reviewed and

accounted for in Amendment Nos. 165/164. Therefore, the proposed Technical Specification changes are concluded to be of negligible safety significance.

2. Create the possibility of a new or different type of accident from those previously evaluated. The proposed changes have no impact on plant design or operation. No new failure modes or accident precursors are introduced by the modified operability requirements and action statement. Therefore, a new or different type of accident is not created.
3. Involve a significant reduction in a margin of safety. The proposed changes do not affect any reactor protection or engineered safeguards setpoints or operating parameters. The proposed changes do not alter any assumptions or analysis inputs and, therefore, do not impact the accident analysis assumptions. Margins of safety are not reduced by the proposed changes.

Using the examples identified in the Federal Register, Vol. 51, No. 44, of March 6, 1986 that are not considered likely to involve significant hazard considerations, the proposed changes include items that are similar to examples (i) and (ii).

- Example (i) is "a purely administrative change to Technical Specifications: for example, a change to achieve consistency throughout the Technical Specifications, correction of an error, or a change in nomenclature." Reinstating the action statement to allow bypassing a channel to perform the required surveillance testing is administrative in nature in that such a provision was previously included in the Technical Specifications and inadvertently removed in Amendment 165/164. Similarly, the reformatting of Table 4.1-1, Item 40 does not change the existing requirements, but rather provides clarification of the requirements and consistency with the rest of Table 4.1-1, as well as with the comparable item in Table 3.7-2.
- Example (ii) is "a change that constitutes an additional limitation, restriction, or control not presently included in the Technical Specifications, e.g., a more stringent Surveillance Requirement." The proposed changes formally incorporate Limiting Conditions for Operation and Action Statements for the non-essential service water isolation actuation logic which are presently missing from the Technical Specifications. Furthermore, the allowed outage time and channel

bypass time limits are consistent with WCAP 10271 and Supplements, entitled "Evaluation of the Surveillance Frequencies and the Out of Service Times for the Engineered Safety Features Actuation System," and the associated NRC Safety Evaluation Reports. These allowed outage time and channel bypass time limits have also been previously reviewed for the safety injection and containment spray logic and approved in Technical Specification Amendment Nos. 165/164.