TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. Manual Reactor Trip				
A. Shunt Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
B. Undervoltage Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux	S	D(2,8),M(3,8) and Q(6,8)	M and S/U(1)	1, 2 and *
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6,8)	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S	R(6,14)	M(14) and S/U(1)	2(7), 3(7), 4 and 5
7. Overtemperature ΔT	S	R(9)†	M	1, 2
8. Overpower ΔT	S	R(9)†	M	1, 2
9. Pressurizer Pressure--Low	S	R†	M	1, 2
10. Pressurizer Pressure--High	S	R†	M	1, 2
11. Pressurizer Water Level--High	S	R†	M	1, 2
12. Loss of Flow - Single Loop	S	R(8)	M	1

† The provisions of Technical Specification 4.0.8 are applicable

Amendment No. 86, 107

TABLE 4.3-2 (Continued)
ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMP					
a. Steam Generator Water Level--Low-low	S	R	M	N.A.	1, 2, 3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1, 2, 3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R†	M	N.A.	1, 2, 3, 4
b. 4 kv Bus Degraded Voltage	S	R†	M	N.A.	1, 2, 3, 4
9. Manual					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
b. Containment Spray Containment Isolation-Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
c. Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
d. Steam Line Isolation	N.A.	N.A.	M(1)†	R†	1, 2, 3

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-10

POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R†
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R†
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R†
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. RWST Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R
12. PORV Position Indicator - Limit Switches	M	R
13. PORV Block Valve Position Indicator - Limit Switches	M	R
14. Safety Valve Position Indicator - Acoustic Monitor	M	R
15. Incore Thermocouples (Core Exit Thermocouples)(4)	M	R(1)†
16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication)	M(2)	R(3)†
17. Containment Sump Level*	M	R
18. Containment Water Level*	M	R

(1) Partial range channel calibration for sensor to be performed below P-12 in MODE 3.

(2) With one train of Reactor Vessel Level Indication inoperable, Subcooling Margin Indication and Core Exit Thermocouples may be used to perform a CHANNEL CHECK to verify the remaining Reactor Vessel Indication train OPERABLE.

(3) Completion of channel calibration for sensors to be performed below P-12 in MODE 3.

(4) The core exit thermocouples will not be installed until the 1988 refueling outage; therefore, surveillances will not be required until that time. See license amendment dated April 10, 1987.

* The requirements for these instruments will become effective after the level transmitters are modified or replaced and become operational. The schedule for modification or replacement of the transmitters is described in the Bases.

† The provisions of Technical Specification 4.0.8x are applicable.

MOVED

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

a. One of the containment atmosphere particulate radioactivity monitoring channels (ERS-2301 or ERS-2401),

b. The containment sump level and flow monitoring system, and

c. Either the containment humidity monitor or one of the containment atmosphere gaseous radioactivity monitoring channels (ERS-2305 or ERS-2405).

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

With only two of the above required leakage detection systems OPERABLE, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours when the required gaseous and/or particulate radioactivity monitoring channels are inoperable; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

a. Containment atmosphere particulate and gaseous (if being used) monitoring system-performance of CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3,

b. Containment sump level and flow monitoring system-performance of CHANNEL CALIBRATION at least once per 18 months,†

c. Containment humidity monitor (if being used) - performance of CHANNEL CALIBRATION at least once per 18 months.

† The provisions of Technical Specification 4.0.8 are applicable

Attachment 4 to AEP:NRC:1181C

Proposed Technical Specifications
for Donald C. Cook Nuclear Plant Unit 2

TABLE 4.3-1

REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. Manual Reactor Trip				
A. Shunt Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
B. Undervoltage Trip Function	N.A.	N.A.	S/U(1)(10)	1, 2, 3*, 4*, 5*
2. Power Range, Neutron Flux	S	D(2,8),M(3,8) and Q(6,8)	M and S/U(1)	1, 2 and *
3. Power Range, Neutron Flux, High Positive Rate	N.A.	R(6)	M	1, 2
4. Power Range, Neutron Flux, High Negative Rate	N.A.	R(6)	M	1, 2
5. Intermediate Range, Neutron Flux	S	R(6,8)	S/U(1)	1, 2 and *
6. Source Range, Neutron Flux	S	R(6,14)	M(14) and S/U(1)	2(7), 3(7), 4 and 5
7. Overtemperature ΔT	S	R(9)†	M	1, 2
8. Overpower ΔT	S	R(9)†	M	1, 2
9. Pressurizer Pressure--Low	S	R†	M	1, 2
10. Pressurizer Pressure--High	S	R†	M	1, 2
11. Pressurizer Water Level--High	S	R†	M	1, 2
12. Loss of Flow - Single Loop	S	R(8)	M	1

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURED ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST	TRIP ACTUATING DEVICE OPERATIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
7. TURBINE DRIVEN AUXILIARY FEEDWATER PUMP					
a. Steam Generator Water Level--Low-low	S	R	M	N.A.	1, 2, 3
b. Reactor Coolant Pump Bus Undervoltage	N.A.	R	M	N.A.	1, 2, 3
8. LOSS OF POWER					
a. 4 kv Bus Loss of Voltage	S	R†	M	N.A.	1, 2, 3
b. 4 kv Bus Degraded Voltage	S	R†	M	N.A.	1, 2, 3, 4
9. MANUAL					
a. Safety Injection (ECCS) Feedwater Isolation Reactor Trip (SI) Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation Auxiliary Feedwater Pumps Essential Service Water System	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
b. Containment Spray Containment Isolation-Phase "B" Containment Purge and Exhaust Isolation Containment Air Recirculation Fan	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
c. Containment Isolation-Phase "A" Containment Purge and Exhaust Isolation	N.A.	N.A.	N.A.	R†	1, 2, 3, 4
d. Steam Line Isolation	N.A.	N.A.	M(1†)	R†	1, 2, 3

† The provisions of Technical Specification 4.0.8 are applicable.

TABLE 4.3-10

POST-ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

INSTRUMENT	CHANNEL CHECK	CHANNEL CALIBRATION
1. Containment Pressure	M	R
2. Reactor Coolant Outlet Temperature - T_{HOT} (Wide Range)	M	R†
3. Reactor Coolant Inlet Temperature - T_{COLD} (Wide Range)	M	R†
4. Reactor Coolant Pressure - Wide Range	M	R
5. Pressurizer Water Level	M	R†
6. Steam Line Pressure	M	R
7. Steam Generator Water Level - Narrow Range	M	R
8. RWST Water Level	M	R
9. Boric Acid Tank Solution Level	M	R
10. Auxiliary Feedwater Flow Rate	M	R
11. Reactor Coolant System Subcooling Margin Monitor	M	R†
12. PORV Position Indicator - Limit Switches	M	R
13. PORV Block Valve Position Indicator - Limit Switches	M	R
14. Safety Valve Position Indicator - Acoustic Monitor	M	R
15. Incore Thermocouples (Core Exit Thermocouples)(4)	M	R(1)†
16. Reactor Coolant Inventory Tracking System (Reactor Vessel Level Indication)	M(2)	R(3)†
17. Containment Sump Level*	M	R
18. Containment Water Level*	M	R

(1) Partial range channel calibration for sensor to be performed below P-12 in MODE 3.

(2) With one train of Reactor Vessel Level Indication inoperable, Subcooling Margin Indication and Core Exit Thermocouples may be used to perform a CHANNEL CHECK to verify the remaining Reactor Vessel Indication train OPERABLE.

(3) Completion of channel calibration for sensors to be performed below P-12 in MODE 3.

(4) The core exit thermocouples will not be installed until the 1988 refueling outage; therefore, surveillances will not be required until that time. See license amendment dated April 10, 1987.

* The requirements for these instruments will become effective after the level transmitters are modified or replaced and become operational. The schedule for modification or replacement of the transmitters is described in the Bases.

† The provisions of Technical Specification 4.0.8 are applicable.

REACTOR COOLANT SYSTEM

3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE

LEAKAGE DETECTION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.4.6.1 The following Reactor Coolant System leakage detection systems shall be OPERABLE:

a. One of the containment atmosphere particulate radioactivity monitoring channels (ERS-2301 or ERS-2401),

b. The containment sump level and flow monitoring system, and

c. Either the containment humidity monitor or one of the containment atmosphere gaseous radioactivity monitoring channels (ERS-2305 or ERS-2405).

APPLICABILITY: MODES 1, 2, 3 and 4

ACTION:

With only two of the above required leakage detection systems OPERABLE, operation may continue for up to 30 days provided grab samples of the containment atmosphere are obtained and analyzed at least once per 24 hours when the required gaseous and/or particulate radioactivity monitoring channels are inoperable; otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.4.6.1 The leakage detection systems shall be demonstrated OPERABLE by:

a. Containment atmosphere particulate and gaseous (if being used) monitoring system-performance of CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL FUNCTIONAL TEST at the frequencies specified in Table 4.3-3,

b. Containment sump level and flow monitoring system-performance of CHANNEL CALIBRATION at least once per 18 months,†

c. Containment humidity monitor (if being used) - performance of CHANNEL CALIBRATION at least once per 18 months.

† The provisions of Technical Specification 4.0.8 are applicable.