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INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.3 INSTRUMENTATION</u>	
3/4.3.1 REACTOR PROTECTION SYSTEM INSTRUMENTATION.....	3/4 3-1
3/4.3.2 ISOLATION ACTUATION INSTRUMENTATION.....	3/4 3-10
3/4.3.3 EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION.....	3/4 3-25
3/4.3.4 RECIRCULATION PUMP TRIP ACTUATION INSTRUMENTATION	
ATWS Recirculation Pump Trip System Instrumentation..	3/4 3-37
End-of-Cycle Recirculation Pump Trip System Instrumentation.....	3/4 3-41
3/4.3.5 REACTOR CORE ISOLATION COOLING SYSTEM ACTUATION INSTRUMENTATION.....	3/4 3-47
3/4.3.6 CONTROL ROD BLOCK INSTRUMENTATION.....	3/4 3-52
3/4.3.7 MONITORING INSTRUMENTATION	
Radiation Monitoring Instrumentation.....	3/4 3-58
Seismic Monitoring Instrumentation.....	3/4 3-61
Meteorological Monitoring Instrumentation.....	3/4 3-64
Remote Shutdown Monitoring Instrumentation.....	3/4 3-67
Accident Monitoring Instrumentation.....	3/4 3-70
Source Range Monitors.....	3/4 3-76
Traversing In-Core Probe System.....	3/4 3-77
Chlorine Detection System.....	3/4 3-78
Fire Detection Instrumentation.....	3/4 3-79
Loose-Part Detection System.....	3/4 3-83
Radioactive Liquid Effluent Monitoring Instrumentation.....	3/4 3-84
Radioactive Gaseous Effluent Monitoring Instrumentation.....	3/4 3-89
3/4.3.8 TURBINE OVERSPEED PROTECTION SYSTEM.....	3/4 3-96
3/4.3.9 FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM ACTUATION INSTRUMENTATION.....	3/4 3-98
3/4.3.10 NEUTRON FLUX MONITORING INSTRUMENTATION.....	3/4 3-102

BASES

SECTION

PAGE

INSTRUMENTATION (Continued)

3/4.3.7 MONITORING INSTRUMENTATION

Radiation Monitoring Instrumentation.....	B 3/4 3-4
Seismic Monitoring Instrumentation.....	B 3/4 3-4
Meteorological Monitoring Instrumentation.....	B 3/4 3-5
Remote Shutdown Monitoring Instrumentation.....	B 3/4 3-5
Accident Monitoring Instrumentation.....	B 3/4 3-5
Source Range Monitors.....	B 3/4 3-5
Traversing In-Core Probe System.....	B 3/4 3-5
Chlorine Detection System.....	B 3/4 3-5
Fire Detection Instrumentation.....	B 3/4 3-6
Loose-Part Detection System.....	B 3/4 3-6
Radioactive Liquid Effluent Monitoring Instrumentation.....	B 3/4 3-6
Radioactive Gaseous Effluent Monitoring Instrumentation.....	B 3/4 3-7

3/4.3.8 TURBINE OVERSPEED PROTECTION SYSTEM..... B 3/4 3-7

3/4.3.9 FEEDWATER SYSTEM/MAIN TURBINE TRIP SYSTEM
ACTUATION INSTRUMENTATION..... B 3/4 3-7

3/4.3.10 NEUTRON FLUX MONITORING INSTRUMENTATION..... B 3/4 3-7

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 RECIRCULATION SYSTEM.....	B 3/4 4-1
3/4.4.2 SAFETY/RELIEF VALVES.....	B 3/4 4-1
3/4.4.3 REACTOR COOLANT SYSTEM LEAKAGE	
Leakage Detection Systems.....	B 3/4 4-2
Operational Leakage.....	B 3/4 4-2
3/4.4.4 CHEMISTRY.....	B 3/4 4-2
3/4.4.5 SPECIFIC ACTIVITY.....	B 3/4 4-3
3/4.4.6 PRESSURE/TEMPERATURE LIMITS.....	B 3/4 4-4
3/4.4.7 MAIN STEAM LINE ISOLATION VALVES.....	B 3/4 4-5

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INSTRUMENTATION

CHLORINE DETECTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.7.8 Two independent chlorine detection system subsystems shall be OPERABLE* with their alarm/trip setpoints adjusted to actuate at a chlorine concentration of less than or equal to 5 ppm within 10 seconds.

APPLICABILITY: ALL OPERATIONAL CONDITIONS.

ACTION:

- a. With one chlorine detection subsystem inoperable, restore the inoperable detection subsystem to OPERABLE status within 7 days or, within the next 6 hours, initiate and maintain operation of at least one control room emergency filtration system train in the isolation mode of operation.
- b. With both chlorine detection subsystems inoperable, within 1 hour initiate and maintain operation of at least one control room emergency filtration system train in the isolation mode of operation.
- c. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.7.8 Each of the above required chlorine detection system subsystems shall be demonstrated OPERABLE by performance of

- a. CHANNEL CHECK at least once per 12 hours,
- b. CHANNEL FUNCTIONAL TEST at least once per 31 days, and
- c. CHANNEL CALIBRATION at least once per 18 months.

*The normal or emergency power source may be inoperable in OPERATIONAL CONDITION 4 or 5.

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- c. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the train by:
1. Verifying that the train satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 0.05% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978 when operating at a flow rate of 1000 cfm \pm 10%.
 2. Verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%; and
 3. Verifying a train flow rate of 1000 cfm \pm 10% during train operation when tested in accordance with ANSI N510-1980.
- d. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1.0%.
- e. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches water gauge while operating the train at a flow rate of 1000 cfm \pm 10%.
 - ~~2. Verifying that on a chlorine detection isolation mode actuation test signal, the train automatically switches to the recirculation (isolation) mode of operation and the isolation valves close within 10 seconds.~~

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

2. ~~3.~~ Verifying that on each of the below pressurization mode actuation test signals, the train automatically switches to the pressurization mode of operation and the control room is maintained at a positive pressure of 1/8 inch water gauge relative to the outside atmosphere during train operation at a flow rate less than or equal to 1000 cfm:

- a) Drywell pressure-high,
- b) Reactor vessel water level-low, and
- c) Reactor Building exhaust plenum-high radiation.

3. ~~4.~~ Verifying that the heaters dissipate 5.0 ± 0.5 kW when tested in accordance with ANSI N510-1980.

- f. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter bank satisfies the inplace penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 while operating the train at a flow rate of 1000 cfm \pm 10%.
- g. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorber bank satisfies the inplace penetration and bypass leakage testing acceptance criteria of less than 0.05% in accordance with ANSI N510-1980 for a halogenated hydrocarbon refrigerant test gas while operating the train at a flow rate of 1000 cfm \pm 10%.

INSTRUMENTATION

BASES

MONITORING INSTRUMENTATION (Continued)

3/4.3.7.3 METEOROLOGICAL MONITORING INSTRUMENTATION

The OPERABILITY of the meteorological monitoring instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public. This instrumentation is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February, 1972.

3/4.3.7.4 REMOTE SHUTDOWN MONITORING INSTRUMENTATION

The OPERABILITY of the remote shutdown monitoring instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT SHUTDOWN of the unit from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criterion 19 of Appendix A to 10 CFR Part 50.

3/4.3.7.5 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess important variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1975 and NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980.

3/4.3.7.6 SOURCE RANGE MONITORS

The source range monitors provide the operator with information of the status of the neutron level in the core at very low power levels during startup and shutdown. At these power levels, reactivity additions shall not be made without this flux level information available to the operator. When the intermediate range monitors are on scale, adequate information is available without the SRMs and they can be retracted.

3/4.3.7.7 TRAVERSING IN-CORE PROBE SYSTEM

The OPERABILITY of the traversing in-core probe system with the specified minimum complement of equipment ensures that the measurements obtained from use of this equipment accurately represent the spatial neutron flux distribution of the reactor core.

3/4.3.7.8 CHLORINE DETECTION SYSTEM

~~The OPERABILITY of the chlorine detection system ensures that an accidental chlorine release will be detected promptly and the necessary protective actions will be automatically initiated to provide protection for control room personnel. Upon detection of a high concentration of chlorine, the control room emergency ventilation system will automatically be placed in the isolation mode of operation to provide the required protection. The detection systems required by this specification are consistent with the recommendations of Regulatory Guide 1.95, "Protection of Nuclear Power Plant Control Room Operators against an Accidental Chlorine Release," February 1975.~~

