Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.6:

"Containment Spray System and Containment Fan Cooler System"

PART 1:

Indian Point 3
Improved Technical Specifications and Bases

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One containment fan cooler train inoperable.	C.1 Restore containment fan cooler train to OPERABLE status.	7 days AND 10 days from discovery of failure to meet the LCO
D. Two containment fan cooler trains inoperable.	D.1 Restore one containment fan cooler train to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Be in MODE 3. AND E.2 Be in MODE 5.	6 hours 36 hours
F. Two containment spray trains inoperable. OR Any combination of three or more trains inoperable.	F.1 Enter LCO 3.0.3.	Immediately

RAI -11

BASES

ACTIONS (continued)

E.1 and E.2

If the Required Action and associated Completion Time of Condition C or D of this LCO are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. RAI-11

E.1

With two containment spray trains or any combination of three or more containment spray and fan cooler trains inoperable, the unit could be in a condition outside the accident analysis. Entering this Condition represents a substantial degradation of the containment heat removal and iodine removal function. Therefore, LCO 3.0.3 must be entered immediately. RAI-14

SURVEILLANCE REQUIREMENTS

SR 3.6.6.1

Verifying the correct alignment for manual, power operated, and automatic valves in the containment spray flow path provides assurance that the proper flow paths will exist for Containment Spray System operation. This SR does not apply to valves that are locked, sealed, or otherwise secured in position, since these were verified to be in the correct position prior to locking, sealing, or securing. This SR does not require any testing or valve manipulation. Rather, it involves verification, through a system walkdown, that those valves outside containment (check valves are inside containment) and capable of potentially being mispositioned are in the correct position. Valves in containment with remote position indication may be checked using remote position indication. RAI-15

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6.5 and SR 3.6.6.6

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation of a containment High-High pressure signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The tests are performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed. RAI -03

The 24 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.6.7

This SR requires verification that each containment fan cooler unit starts and damper re-positions to the emergency mode upon receipt of an actual or simulated safety injection signal. The 24 month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6.5 and SR 3.6.6.6, above, for further discussion of the basis for the 24 month Frequency.

SR 3.6.6.8

This SR verifies that the required Fan Cooler Unit testing is performed in accordance with Specification 5.5.10, Ventilation Filter Testing Program (VFTP). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated

(continued)

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Technical Specification 3.6.6:
"CONTAINMENT SPRAY SYSTEM AND CONTAINMENT FAN COOLER SYSTEM"

PART 2:

CURRENT TECHNICAL SPECIFICATION PAGES

Annotated to show differences between CTS and ITS

CTS PAGE	AMENDMENT FOR REV O SUBMITTAL	AMENDMENT FOR REV 1 SUBMITTAL	COMMENT
3.3.5a	179	179	
3.3-6	145	145	
3.3-14	132	132	
3.3-15	139;97-175	139;9-22-98	* Change to Bases Page
3.3-16	154	154	
4.5-2	172;98-043	185	* Administrative Change to Delete Note for One Time Deferment of Spray Nozzle Test
4.5-3	131	131	
4.5-7	178	178	
4.5-9	148	148	

* No impact on ITS 3.6.6

SEE ITS 3.4.7 and 3.4.8

2) RCS temperature and the source range detectors are monitored hourly;

and

3) no operations are permitted which would reduce the boron concentration of the reactor coolant system.

8. When the RCS average cold leg temperature (T_{cold}) is below 319°F, or when RHR is in service (i.e., not isolated from the RCS), no safety injection pumps shall be energized and aligned to feed the RCS.

9. The requirements of 3.3.A.8 may be relaxed to allow one safety injection pump energized and aligned to feed the RCS under the following circumstances:

SEE ITS 3.4.12

a. emergency boration; OR

b. for pump testing, for a period not to exceed 8 hours; OR

c. loss of RHR cooling.

10. The requirements of 3.3.A.8 may be further relaxed when the RCS is < 200°F, such that two safety injection pumps may be energized and aligned to feed the RCS under the following circumstances:

a. the RCS is vented with an opening greater than or equal to the size of one code pressurizer safety valve flange, OR

b. indicated pressurizer level is at 0% and the plant is vented in accordance with Technical Specification 3.1.A.8.c.1. (Alternate methods and instrumentation may be used to confirm actual RCS elevation.)

LCO 3.6.6 Applicability

B. Containment Cooling and Iodine Removal Systems (A.3)

1. The reactor shall not be brought above the cold shutdown condition unless the following requirements are met: Mode 1, 2, 3 and 4 (A.4)

SEE ITS 3.6.7

a. The spray additive tank contains a minimum of 4000 gallons of solution with a sodium hydroxide concentration ≥35% and ≤38% by weight.

LCO 3.6.6

b. The five fan cooler-charcoal filter units and the two spray pumps, with their associated valves and piping, are operable. Three containment cooling trains (A.3)

Action A.1

2. The requirements of 3.3.B.1 may be modified to allow any one of the following components to be inoperable at one time: (L.8) R.1

Amendment No. 34, 53, 67, 119, 121, 179

Req Act C.1

a. Fan cooler unit 32, 34, or 35 or the flow path for fan cooler unit 32, 34, or 35 may be out of service for a period not to exceed 24 hours provided both containment spray pumps are operable. L.8 R.1

One Fan cooler train 7 days L.5

OR

Fan cooler unit 31 or 33, or the flow path for fan cooler unit 31 or 33 may be out of service for a period not to exceed 7 days provided both containment spray pumps are operable. L.8 R.1

Req Act A.1

b. One containment spray pump (train) may be out of service for a period not to exceed 24 (72) hours, provided the five fan cooler units are operable. A.10 L.8 R.1 L.1

c. Any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to an operable status within 24 hours and all valves in the system that provide the duplicate function are operable. A.10 L.8 R.1

3. If the Containment Cooling and Iodine Removal are not restored to meet the requirements of 3.3.B.1 within the time period specified in 3.3.B.2, then:

Req Act B.1, B.2

a. If the reactor is critical, it shall be in the hot shutdown condition within four (6) hours and in the cold shutdown condition within the following 24 (84) hours. (36) L.3

Req Act E.1, E.2

b. ~~If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values. If the requirements of 3.3.B.1 are not satisfied within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.~~ M.2

Add Condition D and Req Act D.1 L.2

Add Condition F and Req Act F.1 A.5

Second Completion Time for Req Act A.1 and C.1 M.1

except valves locked sealed or otherwise secured — L.9 | R.1 — LA.3 | R.1

2. Containment Spray System

SR 3.6.6.5 a. System tests shall be performed at least once per 24 months. ~~The tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed.~~ Operation of the system is initiated by ~~tripping the normal actuation~~ actual or simulated instrumentation. — L.7 | R.1

SR 3.6.6.6

SR 3.6.6.9 b. The spray nozzles shall be checked for proper functioning at least every ~~five~~ 10 years. — L.4

c. The tests will be considered satisfactory if visual observations indicate all components have operated satisfactorily. — L.6 | R.1

3. Containment Hydrogen Monitoring Systems

SEE ITS 3.3.3

a. Containment hydrogen monitoring system tests shall be performed at intervals no greater than six months. The tests shall include drawing a sample from the fan cooler units.

b. The above tests will be considered satisfactory if visual observations and control panel indication indicate that all components have operated satisfactorily.

Add SR 3.6.6.1 — M.3

Add SR 3.6.6.2 — M.4

Add SR 3.6.6.3 — M.5

SEE CTS MASTER MARKUP

B. Component Tests

1. Pumps

SR 3.6.6.4

~~a.~~ The safety injection pumps, residual heat removal pumps containment spray pumps and the auxiliary component cooling water pumps shall be started at quarterly intervals. The recirculation pumps shall be started at least once per 24 months.

IAW IST Program — A.12 — R.1

b. Acceptable levels of performance shall be that the pumps start, reach their required developed head on recirculation flow, and operate for at least fifteen minutes. — LA.2

2. Valves

a. Each spray additive valve shall be cycled by operator action with the pumps shut down at least once per 24 months.

b. The accumulator check valves shall be checked for operability at least once per 24 months.

c. The following check valves shall be checked for gross leakage at least once per 24 months:

SEE CTS MASTER MARKUP

857A & G	857J	857S & T	897B
857B	857K	857U & W	897C
857C	857L	895A	897D
857D	857M	895B	838A
857E	857N	895C	838B
857F	857P	895D	838C
857H	857Q & R	897A	838D

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Technical Specification 3.6.6:

"Containment Spray System and Containment Fan Cooler System"

PART 3:

DISCUSSION OF CHANGES

Differences between CTS and ITS

change with no impact on safety because there is no change to the existing requirements except as identified and justified for ITS 5.5.10.

A.7 Not Used.

A.8 Not Used.

A.9 Not Used.

A.10 CTS 3.3.B.2.b provides an allowable out of service time (AOT) one inoperable containment spray pump and CTS 3.3.B.2.c establishes an allowable out of service time of 24 hours for any valve required for the functioning of the system (i.e., core spray system). Under ITS LCO 3.6.6, requirements are established on the basis of containment spray trains and a train is considered inoperable if either a pump or a valve associated with that pump is inoperable. This is an administrative change with no adverse impact on safety because there are no changes to the existing requirements except as identified and justified elsewhere in this document.

A.11 Not Used.

A.12 CTS 4.5.B requires that the containment spray pumps be started every quarter. ITS 3.6.6.4 maintains the same requirement except that the SR Frequency is established by the Inservice Testing Program.

This change is acceptable because the IST Program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components and is required by ITS 5.5.7. ITS 5.5.7, Inservice Testing Program (IST), requires establishing and maintaining a program for inservice testing of ASME Code Class 1, 2, and 3 components at frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code. Additionally, 10 CFR 50.55a(f) already provides the regulatory requirements for this IST Program, and specifies that ASME Code Class 1, 2, and 3 pumps and

valves are covered by an IST Program. Therefore, maintaining the requirement that containment spray trains must be Operable in ITS 3.6.6 and maintaining the requirement for periodic testing of pumps and valves in the IST Program required by ITS 5.5.7 is an administrative change with no impact on safety.

MORE RESTRICTIVE

M.1 CTS 3.3.B.2 establishes allowable out of service times for the Containment Cooling and Iodine Removal System; however, there is no limit on the maximum amount of time that any combination of containment spray trains and containment fan cooler trains may be out of service. ITS LCO 3.6.6, Required Actions A.1 and C.1, have new supplementary Completion Times that establish a limit on the maximum consecutive time that the plant may be without the full complement of containment cooling and iodine removal capability. This supplementary Completion Time is needed to place a reasonable limit on the amount of time that operation may continue with degraded containment cooling and iodine removal capability consistent with the intent of the Allowable Out of Service Times (AOTs) for a single train or other LCO 3.6.6 Condition. This change is acceptable because it does not introduce any operation which is un-analyzed while placing a reasonable limit on the amount of time that Operation may continue with degraded containment cooling and iodine removal capability. Therefore, this change has no adverse impact on safety.

M.2 CTS 3.3.B.3 establishes the Actions required if either containment spray and/or containment fan cooler trains are not restored to meet CTS requirements within specified completion times. CTS 3.3.B.3.a specifies that, if the reactor is critical when requirements are not met, then the reactor must be in hot shutdown (Mode 3) within 4 hours and cold shutdown (Mode 5) within the following 24 hours. However, if the reactor is subcritical when requirements are not met, CTS 3.3.B.3.b requires only that reactor coolant system temperature and pressure not be increased more than 25°F and 100 psi, respectively, over existing values with the requirement to proceed to cold shutdown (Mode 5) deferred by 48 hours.

Under the same conditions, ITS 3.6.6, Required Actions B.1 and B.2 and/or Required Actions E.1 and E.2, require that the reactor be in Mode 3 in 6 hours (See ITS 3.6.6, DOC L.3) and in Mode 5 in 36 hours (Required Actions B.2,and E.2, See ITS 3.6.6, DOC L.3), regardless of the status of the unit when the Condition is identified. The allowance provided in CTS 3.3.B.3.b is deleted.

This change is needed to eliminate the ambiguity created by CTS 3.3.B.3.b when performing a reactor shutdown and cooldown required by CTS 3.3.B.3.a and to ensure that the plant is placed outside the LCO Applicability promptly when the LCO requirements are not met. This change is acceptable because placing the plant outside the LCO Applicability when LCO requirements are not met is conservative and there is no change in the CTS 3.3.B.3 requirement. This change has no significant adverse impact on safety.

M.3 ITS SR 3.6.6.1 is added to require verification every 31 days that each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position. There is no equivalent requirement in the CTS. This change is needed because it provides assurance that the proper flow paths exist for containment spray system operation, and that any valves outside containment that are capable of potentially being mispositioned are in the correct position. This change has no adverse impact on safety.

M.4 ITS SR 3.6.6.2 is added to require operation of each required containment fan cooler train for ≥ 15 minutes every 92 days. There is no equivalent requirement in the CTS. This change is needed because it provides assurance that all trains are operable and all controls are functioning properly and it ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. This change has no adverse impact on safety.

M.5 ITS SR 3.6.6.3 is added to require verification every 92 days that cooling water flow to each fan cooler unit is ≥ 1400 gpm. There is no

equivalent requirement in the CTS. This change is needed because it provides assurance that the design flow rate assumed in the safety analysis will be achieved during an accident. This change has no adverse impact on safety.

IP3 CTS has no current requirement to periodically initiate the accident flow through the fan cooler units and is voluntarily adopting this STS SR 3.6.6A.3 at a Frequency of 92 days versus the 31 day Frequency in NUREG-1431. The longer Frequency is needed because initiation of flow through the fan cooler units causes a major perturbation of the entire service water system which affects flow settings and temperatures for a wide variety of plant equipment. The 92 day Frequency is consistent with the current practice for switching the essential and non-essential service water flow headers. This 92 day Frequency is also consistent with IST program requirements for testing the flow control valves for the FCUs. This Frequency is acceptable because of the demonstrated reliability of this equipment.

M.6 CTS 4.5.A.4.b.3 requires that charcoal filter (i.e., fan cooler unit) isolation valves shall be tested to verify operability every 24 months. ITS SR 3.6.6.7 expands this surveillance to require verification that each fan cooler unit actuates and dampers re-position on receipt of an actual or simulated safety injection signal. This change is needed because it provides assurance that all fan cooler units will start and dampers re-position when required to mitigate a design basis accident. This change has no adverse impact on safety.

LESS RESTRICTIVE

L.1 CTS 3.3.B.2.b provides an allowable out of service time (AOT) of 24 hours for one inoperable containment spray pump; and, CTS 3.3.B.2.c establishes an allowable out of service time of 24 hours for any valve required for the functioning of the system (i.e., core spray system) provided all valves in the system that provide the duplicate function are operable.

Under the same conditions. ITS LCO 3.6.6 establishes an AOT of 72 hours

L.3 CTS 3.3.B.3 establishes the Actions required if either containment spray and/or containment fan cooler trains are not restored to meet CTS requirements within specified completion times. CTS 3.3.B.3.a specifies that, if the reactor is critical when requirements are not met, then the reactor must be in hot shutdown (Mode 3) within 4 hours and cold shutdown (Mode 5) within the following 24 hours (See ITS 3.6.6, DOC M.2). Under the same conditions, ITS 3.6.6, Required Actions B.1 and B.2 require that the reactor be in Mode 3 in 6 hours and in Mode 5 in 84 hours when containment spray requirements are not met and Required Actions E.1 and E.2, require that the reactor be in Mode 3 in 6 hours and in Mode 5 in 36 hours when FCU requirements are not met.

This change is needed and is acceptable because placing the reactor in Mode 3 in 6 hours and in Mode 5 in 84 hours is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. The extended interval to reach Mode 5 when one fan cooler unit train is inoperable provides additional time for attempting restoration when there is minimal loss of capacity. This Completion Time is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in Mode 3. Therefore, this change has no significant adverse impact on safety.

L.4 CTS 4.5.2.b requires that the spray nozzles be checked for proper functioning at least every five years. ITS SR 3.6.6.requires verification every ten years that each spray nozzle is unobstructed. This change, extending the SR Frequency from 5 years to 10 years, is acceptable because the spray nozzles are passive devices and industry experience indicates this interval is sufficient to detect obstruction of the spray nozzles. During the last two performances of this SR, there was no evidence of obstruction or improper functioning of the spray nozzles. Therefore, this change has no adverse impact on safety.

L.5 CTS 3.3.B.2.a provides allowable out of service times for fan cooler units (FCUs) as follows:

function of the Containment Spray System, and the low probability of DBA occurring during this period. Therefore, this change has no significant adverse impact on safety.

L.6 CTS 4.5.A.2.a specifies requirements for a functional test of the containment spray system and CTS 4.5.A.2.c establishes the acceptance criteria for this test as "the tests will be considered satisfactory if visual observations indicate all components have operated satisfactorily." ITS SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement to demonstrate Operability of the containment spray system; however, the statement that appropriate verification of system performance is limited to visual observations that all components have operated is deleted. This change is acceptable because ITS SR 3.6.6.5 and SR 3.6.6.6 require demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

L.7 CTS 4.5.A.2.a requires a functional test of the containment spray system and specifies that "operation of the system is initiated by tripping the normal actuation instrumentation." ITS SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement for a functional test of the containment spray system; however, the test may be initiated by either an actual or simulated signal. This change is acceptable because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. This is less restrictive change with no impact on safety because the use of an actual or simulated signal does not change the validity of the test as a verification of plant response to the event.

L.8 CTS 3.3.B.2 specifies that "any one" of the five fan cooler units or containment spray pumps to be inoperable at any one time and CTS 3.3.B.2.a, CTS 3.3.B.2.b, and CTS 3.3.B.2.c do not permit any allowable out of service time (AOT) if redundant trains of containment spray or fan cooler units are inoperable.

ITS LCO 3.6.6 allows an allowable out of service time (AOT) even if

redundant trains of containment spray or fan cooler units are inoperable as long as the combination of inoperable fan cooler units (i.e., containment fan cooler trains) and/or inoperable containment spray trains do not result in less than the minimum functional capability assumed in the accident analysis.

ITS LCO 3.6.6 establishes requirements for three Fan Cooler System trains where FCU 31 and FCU 33 are identified as Containment Fan Cooler train 5A, FCU 32 and FCU 34 are identified as Containment Fan Cooler train 2A/3A, and FCU 35 is identified as Containment Fan Cooler train 6A (See ITS 3.6.6, DOC A.3).

ITS LCO 3.6.6, Required Action C.1, allows any one train (i.e., up to 2 FCUs) to be inoperable for 7 days and ITS LCO 3.6.6, Required Action D.1, allows any two trains (i.e., up to 4 FCUs) to be inoperable for 72 hours. This change is acceptable because Conditions C and D represent a loss of redundancy but the minimum required containment cooling and iodine removal function is maintained. Additionally, Condition F (Enter LCO 3.0.3 if any combination of three or more trains of containment spray or FCUs are inoperable) addresses potential loss of safety function. Therefore, Required Actions C.1, D.1 and F.1 ensure there is no loss of containment cooling and iodine removal function because any of the following combinations of equipment will provide sufficient heat removal capability to maintain the post-accident containment pressure below the design value: a) Two containment spray trains; or, b) Three fan cooler trains (i.e., all five fan cooler units); or, c) One containment spray train and any two fan cooler trains (i.e., at least three fan cooler units). This last configuration, one containment spray train and any two fan cooler trains, is the configuration available following the loss of any safeguards power train (e.g., diesel failure). Additionally, the 72-hour AOT for loss of redundancy for the containment cooling and iodine removal function is bounded by the AOT for an inoperable diesel generator and takes into account the redundant heat removal capabilities, the iodine removal function of the Containment Spray System, and the low probability of DBA occurring during this period. Therefore, this change has no significant adverse impact on safety.

L.9 CTS 4.5.A.2.a specifies requirements for a functional test of the

containment spray system. ITS SR 3.6.6.5 maintains the requirement to demonstrate Operability of the containment spray system; however, ITS SR 3.6.6.5 explicitly excludes valves that are "locked, sealed, or otherwise secured in position." This change is acceptable because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the CTS. Therefore, this change has no impact on safety.

REMOVED DETAIL

LA.1 Not Used.

LA.2 CTS 4.5.B.1.a requires each containment spray pump be started periodically and CTS 4.5.B.1.b specifies the test acceptance criteria that each pump starts, reaches the required developed head and "operates for at least 15 minutes." ITS 3.6.6.4 maintains the same requirement; however, the acceptance criterion for required pump run time is relocated to the IST Program.

This change is acceptable because IST test procedures ensure that stable conditions are established prior to the verification of acceptance criteria and the requirement to operate for 15 minutes does not otherwise contribute to the verification of pump Operability. This change is acceptable because the IST Program provides controls for inservice testing of ASME Code Class 1, 2, and 3 components and is required by ITS 5.5.7. ITS 5.5.7, Inservice Testing Program (IST), requires establishing and maintaining a program for inservice testing of ASME Code Class 1, 2, and 3 components at frequencies specified in Section XI of the ASME Boiler and Pressure Vessel Code. Additionally, 10 CFR 50.55a(f) already provides the regulatory requirements for this IST Program, and specifies that ASME Code Class 1, 2, and 3 pumps and valves are covered by an IST Program. Therefore, maintaining the requirement that containment spray trains must be Operable in ITS 3.6.6 and maintaining the requirement for periodic testing of pumps and valves in the IST Program required by ITS 5.5.7 provides a high degree of assurance that pumps will be tested and maintained to ensure containment

spray Operability. Additionally, ITS 5.5.7, Inservice Testing Program (IST), requirements and 10 CFR 50.55a(f) ensure adequate change control and regulatory oversight for any changes to the existing requirements. Therefore, the testing Frequency for containment spray can be maintained in the IST program with no significant adverse impact on safety.

LA.3 CTS 4.5.A.2.a specifies requirements for a functional test of the containment spray system and includes the requirement that "the tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed." ITS SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement for a functional test of the containment spray system; however, the stipulation that isolation valves be closed is relocated to the Bases. This is acceptable because these valve are manual valves and not part of the test and the test is not intended to transfer NaOH from the storage tank into containment.

This change is acceptable because SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement for a functional test of the containment spray system. Maintaining details about allowed system lineups needed to prevent adverse consequences of the test in the Bases does not affect the requirement to verify system Operability. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the requirement to maintain the hydrogen recombiner Operability. This change is a less restrictive administrative change with no impact on safety.

Indian Point 3
Improved Technical Specifications (ITS)
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Technical Specification 3.6.6:

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PART 4:

No Significant Hazards Considerations for Changes between CTS and ITS that are Less Restrictive

No Significant Hazard Considerations for Changes that are Administrative, More Restrictive, and Removed Details are the same for all Packages. A Copy is included at the end of the Package.

NO SIGNIFICANT HAZARDS EVALUATION

ITS SECTION 3.6.6 - Containment Spray System and Containment Fan Cooler System

LESS RESTRICTIVE

("L.3" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 3.3.B.3 establishes the Actions required if either containment spray and/or containment fan cooler trains are not restored to meet CTS requirements within specified completion times. CTS 3.3.B.3.a specifies that, if the reactor is critical when requirements are not met, then the reactor must be in hot shutdown (Mode 3) within 4 hours and cold shutdown (Mode 5) within the following 24 hours (See ITS 3.6.6, DOC M.2). Under the same conditions, ITS 3.6.6, Required Actions B.1 and B.2 require that the reactor be in Mode 3 in 6 hours and in Mode 5 in 84 hours when containment spray requirements are not met and Required Actions E.1 and E.2, require that the reactor be in Mode 3 in 6 hours and in Mode 5 in 36 hours when FCU requirements are not met.

   This change will not result in a significant increase in the probability or consequences of an accident previously evaluated because placing the reactor in Mode 3 in 6 hours and in Mode 5 in 84 hours is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. Additionally, the extended interval to reach Mode 5 when one fan cooler train is inoperable provides additional time for attempting restoration of the fan cooler unit. This Completion Time is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in Mode 3.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because placing the reactor in Mode 3 in 6 hours and in Mode 5 in 84 hours is reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems. Additionally, the extended interval to reach Mode 5 when one fan cooler unit train is inoperable provides additional time for attempting restoration of the fan cooler unit train. This Completion Time is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in Mode 3.

LESS RESTRICTIVE
("L.4" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.2.b requires that the spray nozzles be checked for proper functioning at least every five years. ITS SR 3.6.6.requires

generator and takes into account the redundant heat removal capabilities, the iodine removal function of the Containment Spray System, and the low probability of DBA occurring during this period.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because this condition represents a loss of redundancy but the minimum required containment cooling and iodine removal function is maintained. Therefore, Required Actions C.1, D.1 and F.1 ensure there is no loss of containment cooling and iodine removal function.

LESS RESTRICTIVE
("L.6" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a specifies requirements for a functional test of the containment spray system and CTS 4.5.A.2.c establishes the acceptance criteria for this test as "the tests will be considered satisfactory if

visual observations indicate all components have operated satisfactorily." ITS SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement for Operability verification of the containment spray system; however, the statement that appropriate verification of system performance is limited to visual observations that all components have operated is deleted.

This change will not result in an increase in the probability or consequences of an accident previously evaluated because ITS SR 3.6.6.5 and SR 3.6.6.6 require demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because ITS SR 3.6.6.5 and SR 3.6.6.6 require demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

LESS RESTRICTIVE
("L.7" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a requires a functional test of the containment spray system and specifies that "operation of the system is initiated by tripping the normal actuation instrumentation." ITS SR 3.6.6.5 and SR 3.6.6.6 maintain the requirement for a functional test of the containment spray system; however, the test may be initiated by either an actual or simulated signal.

   This change will not result in an increase in the probability or consequences of an accident previously evaluated because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. The use of an actual or simulated signal does not change the validity of the test as a verification of plant response to the event.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. The use of an actual or simulated signal does not change the validity of the test as a verification of plant response to the event.

LESS RESTRICTIVE
("L.8" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 3.3.B.2 specifies that "any one" of the five fan cooler units or containment spray pumps to be inoperable at any one time and CTS 3.3.B.2.a, CTS 3.3.B.2.b, and CTS 3.3.B.2.c do not permit any allowable out of service time (AOT) if redundant trains of containment spray or fan cooler units are inoperable.

   ITS LCO 3.6.6 allows an allowable out of service time (AOT) even if redundant trains of containment spray or fan cooler units are inoperable as long as the combination of inoperable fan cooler units (i.e., containment fan cooler trains) and/or inoperable containment spray trains do not result in less than the minimum functional capability assumed in the accident analysis.

   ITS LCO 3.6.6 establishes requirements for three Fan Cooler System

trains where FCU 31 and FCU 33 are identified as Containment Fan Cooler train 5A, FCU 32 and FCU 34 are identified as Containment Fan Cooler train 2A/3A, and FCU 35 is identified as Containment Fan Cooler train 6A (See ITS 3.6.6, DOC A.3).

ITS LCO 3.6.6, Required Action C.1, allows any one train (i.e., up to 2 FCUs) to be inoperable for 7 days and ITS LCO 3.6.6, Required Action D.1, allows any two trains (i.e., up to 4 FCUs) to be inoperable for 72 hours.

This change will not result in a significant increase in the probability of an accident previously evaluated because fan cooler unit status is not the initiator of any analyzed event; therefore, the proposed change to the actions when this limit is not met is not the initiator of any analyzed event. This change will not result in a significant increase in the consequences of an accident previously evaluated because this condition represents a loss of redundancy but the minimum required containment cooling and iodine removal function is maintained. Therefore, Required Actions C.1, D.1 and F.1 ensure there is no loss of containment cooling and iodine removal function because any of the following combinations of equipment will provide sufficient heat removal capability to maintain the post-accident containment pressure below the design value: a) Two containment spray trains; or, b) Three fan cooler trains (i.e., all five fan cooler units); or, c) One containment spray train and any two fan cooler trains (i.e., at least three fan cooler units). This last configuration, one containment spray train and any two fan cooler trains, is the configuration available following the loss of any safeguards power train (e.g., diesel failure). Additionally, the 72-hour AOT for loss of redundancy for the containment cooling and iodine removal function is bounded by the AOT for an inoperable diesel generator and takes into account the redundant heat removal capabilities, the iodine removal function of the Containment Spray System, and the low probability of DBA occurring during this period.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because this condition represents a loss of redundancy but the minimum required containment cooling and iodine removal function is maintained. Therefore, Required Actions C.1, D.1 and F.1 ensure there is no loss of containment cooling and iodine removal function.

LESS RESTRICTIVE
("L.9" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a specifies requirements for a functional test of the containment spray system. ITS SR 3.6.6.5 maintains the requirement to demonstrate Operability of the containment spray system; however, ITS SR 3.6.6.5 explicitly excludes valves that are "locked, sealed, or otherwise secured in position."

   This change will not result in an increase in the probability or

consequences of an accident previously evaluated because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the CTS.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the ITS.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.6:

"Containment Spray System and Containment Fan Cooler System"

PART 5:

NUREG-1431
Annotated to show differences between NUREG-1431 and ITS

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two ~~[required]~~ containment cooling trains inoperable. (fan cooler)	D.1 Restore one ~~[required]~~ containment cooling train to OPERABLE status.	72 hours
E. Required Action and associated Completion Time of Condition C or D not met.	E.1 Be in MODE 3. **AND** E.2 Be in MODE 5.	6 hours 36 hours
F. Two containment spray trains inoperable. **OR** Any combination of three or more trains inoperable.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.6~~A~~.1	Verify each containment spray manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

	SURVEILLANCE		FREQUENCY
<DOC M.4>	SR 3.6.6~~A~~.2	Operate each ~~[required]~~ containment cooling train fan unit for ≥ 15 minutes. (unit) (fan cooler)	3 days (92) X.1 R.1
<DOC M.5>	SR 3.6.6~~A~~.3	Verify each ~~[required]~~ containment cooling train cooling water flow rate is ≥ [700] gpm. (1400) (fan cooler unit)	3 days (92) X.2 R.1
<4.5.B.1.a> <4.5.B.1.b> <DOC A.12>	SR 3.6.6~~A~~.4	Verify each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program
<4.5.A.2.a> <4.5.A.2.c>	SR 3.6.6~~A~~.5	Verify each automatic containment spray valve in the flow path that is not locked, sealed, or otherwise secured in position, actuates to the correct position on an actual or simulated actuation signal.	18 months (24)
<4.5.A.2.a> <4.5.A.2.c> <DOC A.9>	SR 3.6.6~~A~~.6	Verify each containment spray pump starts automatically on an actual or simulated actuation signal.	18 months (24)
<4.5.A.4.b.3> <DOC M.6>	SR 3.6.6~~A~~.7	Verify each ~~[required]~~ containment cooling train (unit) (fan cooler) starts automatically on an actual or simulated actuation signal. and dampers re-position to the emergency mode	18 months (24)

(continued)

Insert: 3.6-25-01

INSERT: 3.6-71-01

Entering this Condition represents a substantial degradation of the containment heat removal and iodine removal function. R.1

INSERT: 3.6-71-02

Valves in containment with remote position indication may be checked using remote position indication.

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.2

Operating each ~~[required]~~ containment ~~cooling train~~ fan unit for ≥ 15 minutes ensures that all ~~trains~~ are OPERABLE and that all associated controls are functioning properly. It also ensures that blockage, fan or motor failure, or excessive vibration can be detected for corrective action. The 31 day Frequency was developed considering the known reliability of the fan units and controls, the ~~two train~~ redundancy available, and the low probability of significant degradation of the containment ~~cooling train~~ occurring between surveillances. It has also been shown to be acceptable through operating experience.

SR 3.6.6~~A~~.3

Verifying that ~~each [required] containment cooling train ESW cooling~~ flow rate to each ~~cooling~~ unit is ≥ ~~[700]~~ gpm provides assurance that the design flow rate assumed in the safety analyses will be achieved (Ref. 3). The Frequency was developed considering the known reliability of the Cooling Water System, the ~~two train~~ redundancy available, and the low probability of a significant degradation of flow occurring between surveillances.

SR 3.6.6~~A~~.4

Verifying each containment spray pump's developed head at the flow test point is greater than or equal to the required developed head ensures that spray pump performance has not degraded during the cycle. Flow and differential pressure are normal tests of centrifugal pump performance required by Section XI of the ASME Code (Ref. 8). Since the containment spray pumps cannot be tested with flow through the spray headers, they are tested on recirculation flow. This test confirms one point on the pump design curve and is indicative of overall performance. Such inservice tests confirm component OPERABILITY, trend performance, and detect incipient failures by abnormal performance. The Frequency of the SR is in accordance with the Inservice Testing Program.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.6~~A~~.5 and SR 3.6.6~~A~~.6

These SRs require verification that each automatic containment spray valve actuates to its correct position and that each containment spray pump starts upon receipt of an actual or simulated actuation of a containment ~~High-3~~ High-High pressure signal. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. CLB-1 Insert: B3.6-73-02 R.1 The ~~[18]~~ 24 month Frequency is based on the need to perform these Surveillances under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillances were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillances when performed at the ~~[18]~~ 24 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

~~The surveillance of containment sump isolation valves is also required by SR 3.5.2.5. A single surveillance may be used to satisfy both requirements.~~

SR 3.6.6~~A~~.7

This SR requires verification that each ~~[required]~~ containment ~~cooling train actuates~~ fan cooler unit starts and damper is positions to the emergency mode upon receipt of an actual or simulated safety injection signal. The ~~[18]~~ 24 month Frequency is based on engineering judgment and has been shown to be acceptable through operating experience. See SR 3.6.6~~A~~.5 and SR 3.6.6~~A~~.6, above, for further discussion of the basis for the ~~[18]~~ 24 month Frequency.

Insert: B3.6-73-01

SR 3.6.6~~A~~.~~8~~ 9

With the containment spray inlet valves closed and the spray header drained of any solution, low pressure air or smoke can be blown through test connections. This SR ensures that each spray nozzle is unobstructed and provides assurance that spray coverage of the containment during an accident is not degraded. Due to the passive design of the nozzle, a test at ~~[the first refueling and at]~~ 10 year intervals is considered adequate to detect obstruction of the nozzles.

(continued)

INSERT: 3.6-73-01

SR 3.6.6.8

This SR verifies that the required Fan Cooler Unit testing is performed in accordance with Specification 5.5.10, Ventilation Filter Testing Program (VFTP). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the VFTP.

INSERT: 3.6-73-02

CLB.1

The tests are performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked close.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.6:

"Containment Spray System and Containment Fan Cooler System"

PART 6:

Justification of Differences between

NUREG-1431 and IP3 ITS

JUSTIFICATION OF DIFFERENCES FROM NUREG-1431
ITS SECTION 3.6.6 - Containment Spray System and Containment Fan Cooler System

RETENTION OF EXISTING REQUIREMENT (CURRENT LICENSING BASIS)

CLB.1 This change maintains the IP3 CTS requirement to perform testing with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked close. This change is acceptable because it ensures that spray is not introduced into containment and sodium hydroxide is not introduced into the containment spray system during testing. In addition, these valves are manually actucated and as such are not included in the actuation test.

PLANT-SPECIFIC WORDING PREFERENCE OR MINOR EDITORIAL IMPROVEMENT

PA.1 Corrected typographical error or made a minor editorial improvement to improve clarity and ensure requirements are fully understood and consistently applied. There are no technical changes to requirements as specified in NUREG 1431, Rev. 1; therefore, this change is not a significant or generic deviation from NUREG 1431, Rev 1.

PLANT-SPECIFIC DIFFERENCE IN THE DESIGN OR DESIGN BASIS

DB.1 Design or implementation details are incorporated or revised as necessary to more precisely describe IP3 current design or practice. These changes are intended to describe the design, improve clarity, or ensure requirements are fully understood and consistently applied. Unless identified and described blow, these changes are self-explanatory. A detailed description of the design, accident analysis assumptions, and Operability requirements are incorporated into the IP3 ITS Bases. These changes maintain the IP3 current licensing basis except as identified and justified in the CTS/ITS discussion of changes.

DIFFERENCE BASED ON A GENERIC CHANGE TRAVELER FOR NUREG-1431

None

DIFFERENCE FOR ANY REASON OTHER THAN ABOVE

X.1 IP3 CTS has no current requirement to periodically operate each of the Fan Cooler Units and is voluntarily adopting this STS SR 3.6.6A.2 at a Frequency of 92 days versus the 31 day Frequency in NUREG-1431. This deviation from NUREG-1431 is consistent with the current practice for rotating the operating fans. This Frequency is acceptable because of the demonstrated reliability of this equipment and that the fans are routinely operated during normal plant operation.

X.2 IP3 CTS has no current requirement to periodically initiate the accident flow through the fan cooler units and is voluntarily adopting this STS SR 3.6.6A.3 at a Frequency of 92 days versus the 31 day Frequency in NUREG-1431. The longer Frequency is needed because initiation of flow through the fan cooler units causes a major perturbation of the entire service water system which affects flow settings and temperatures for a wide variety of plant equipment. The 92 day Frequency is consistent with the current practice for switching the essential and non-essential service water flow headers. This 92 day Frequency is also consistent with IST program requirements for testing the flow control valves for the FCUs. This Frequency is acceptable because of the demonstrated reliability of this equipment.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.7:

"Spray Additive System"

PART 1:

Indian Point 3
Improved Technical Specifications and Bases

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Spray Additive System

BASES

BACKGROUND

The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere resulting from a Design Basis Accident (DBA).

Radioiodine in its various forms is the fission product of primary concern in the evaluation of a DBA. It is absorbed by the spray from the containment atmosphere. To enhance the iodine absorption capacity of the spray, the spray solution is adjusted to an alkaline pH that promotes iodine hydrolysis, in which iodine is converted to nonvolatile forms. Because of its stability when exposed to radiation and elevated temperature, sodium hydroxide (NaOH) is the preferred spray additive. The NaOH added to the spray also ensures an alkaline pH of the solution recirculated from the containment sump. An alkaline pH minimizes the evolution of iodine as well as the occurrence of chloride and caustic stress corrosion on mechanical systems and components. RAI -09

The Spray Additive System consists of one spray additive tank that is shared by the two trains of containment spray. Each train provides a flow path from the spray tank to a containment spray pump and consists of an eductor for each containment spray pump, valves, instrumentation, and connecting piping. Each eductor draws the NaOH spray solution from the common tank using a portion of the borated water discharged by the containment spray pump as the motive flow. The eductor mixes the NaOH solution and the borated water and discharges the mixture into the spray pump suction line. The eductors are designed to ensure that the pH of the spray mixture is between 9.0 and 10.0.

The Containment Spray System actuation signal opens the valves from the spray additive tank to the spray pump suctions after a 2 minute delay. The 35% to 38% NaOH solution is drawn into the spray pump suctions. The spray additive tank capacity provides

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.7.2 (continued)

an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected.

SR 3.6.7.3

This SR provides verification of the NaOH concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

SR 3.6.7.4

This SR provides verification that each automatic valve in the Spray Additive System flow path actuates to its correct position. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The test is performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed.

RAI -05

The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 24 month Frequency.

RAI -05

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.7.4 (continued)

Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

SR 3.6.7.5

To ensure that the correct pH level is established in the borated water solution provided by the Containment Spray System, flow in the Spray Additive System is verified once every 5 years. This SR provides assurance that NaOH will be introduced into the flow path upon Containment Spray System initiation. This test is satisfied by a verification of spray additive system flow without pumping any NaOH solution from the spray additive tank and without draining the spray additive tank. Water may be used in lieu of NaOH for the performance of this SR which is not intended to require the transfer of NaOH. Due to the passive nature of the spray additive flow controls, the 5 year Frequency is sufficient to identify component degradation that may affect flow. RAI -10

REFERENCES

1. FSAR, Chapters 6 and 14.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.7:
"SPRAY ADDITIVE SYSTEM"

PART 2:

CURRENT TECHNICAL SPECIFICATION PAGES

Annotated to show differences between CTS and ITS

CTS PAGE	AMENDMENT FOR REV O SUBMITTAL	AMENDMENT FOR REV 1 SUBMITTAL	COMMENT
3.3-5a	179	179	
3.3-6	145	145	
T4.1-2(1)	139	200	* Deleted Boric Acid Tank from Table
4.5-2	172;98-043	185	* Administrative Change to Delete Note for One Time Deferment of Spray Nozzle Test
4.5-7	178	178	

* No impact on ITS 3.6.7

SEE ITS 3.6.6

a. Fan cooler unit 32, 34, or 35 or the flow path for fan cooler unit 32, 34, or 35 may be out of service for a period not to exceed 24 hours provided both containment spray pumps are operable.

OR

Fan cooler unit 31 or 33, or the flow path for fan cooler unit 31 or 33 may be out of service for a period not to exceed 7 days provided both containment spray pumps are operable.

b. One containment spray pump may be out of service for a period not to exceed 24 hours, provided the five fan cooler units are operable.

c. ~~Any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to an operable status within 24 hours and all valves in the system that provide the duplicate function are operable.~~ L.1 | R 1

LCO 3.6.7

If the Containment Cooling and Iodine Removal are not restored to meet the requirements of 3.3.B.1 within the time period specified in 3.3.B.2, then:

Req Act B.1 B.2

a. If the reactor is critical, it shall be in the hot shutdown condition within ~~four~~ 6 hours and in the cold shutdown condition within ~~the following 24~~ 84 hours. L.2

b. ~~If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values. If the requirements of 3.3.B.1 are not satisfied within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.~~ M.3

{Add Condition A and associated Req. Actions} L.1

2. Containment Spray System

SR 3.6.7.4

~~a.~~ System tests shall be performed at least once per 24 months. ~~The tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed.~~ Operation of the system is initiated by tripping the normal actuation instrumentation.

of valves not locked sealed or otherwise secured — L4 | R.1

LA.1 | R.1

actual or simulated signal — L.5 | R.1

SEE ITS 3.6.6

b. The spray nozzles shall be checked for proper functioning at least every five years.

SR 3.6.7.4

c. ~~The tests will be considered satisfactory if visual observations indicate all components have operated satisfactorily.~~ — L.6 | R.1

SEE ITS 3.3.3

3. Containment Hydrogen Monitoring Systems

a. Containment hydrogen monitoring system tests shall be performed at intervals no greater than six months. The tests shall include drawing a sample from the fan cooler units.

b. The above tests will be considered satisfactory if visual observations and control panel indication indicate that all components have operated satisfactorily.

Add SR 3.6.7.1 — M.1

Add SR 3.6.7.5 — M2

B. Component Tests

1. Pumps

SEE ITS 3.5.2 3.5.3 3.6.6

a. The safety injection pumps, residual heat removal pumps, containment spray pumps and the auxiliary component cooling water pumps shall be started at quarterly intervals. The recirculation pumps shall be started at least once per 24 months.

b. Acceptable levels of performance shall be that the pumps start, reach their required developed head on recirculation flow, and operate for at least fifteen minutes.

2. Valves

<3.6.7.4>

a. Each spray additive valve shall be cycled ~~by operator action~~ ~~with the pumps shut down~~ at least once per 24 months.

that is not locked, sealed, or otherwise secured in position (L.4)

(L.5) R.1

SEE ITS 3.5.1

b. The accumulator check valves shall be checked for operability at least once per 24 months.

SEE ITS 3.4.14

c. The following check valves shall be checked for gross leakage at least once per 24 months:

857A & G	857J	857S & T	897B
857B	857K	857U & W	897C
857C	857L	895A	897D
857D	857M	895B	838A
857E	857N	895C	838B
857F	857P	895D	838C
857H	857Q & R	897A	838D

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.7:
"Spray Additive System"

PART 3:

DISCUSSION OF CHANGES

Differences between CTS and ITS

A.4 Not Used.

A.5 Not Used.

A.6 Not Used.

MORE RESTRICTIVE

M.1 ITS SR 3.6.7.1 is added to require verification every 31 days that each spray additive manual, power operated, and automatic valve in the flow path that is not locked, sealed, or otherwise secured in position is in the correct position. There is no equivalent requirement in the CTS. This change is needed because it provides assurance that the proper flow paths exist for the containment spray additive system operation. This change has no adverse impact on safety.

M.2 ITS SR 3.6.7.5 is added to require verification every five years of spray additive rate from each solution tank's flow path. There is no equivalent requirement in the CTS. The addition of this surveillance requirement is needed because it provides assurance that NaOH will flow into the flow path upon containment spray system initiation. This change has no adverse impact on safety.

M.3 CTS 3.3.B.3 establishes the Actions required if either containment spray (including the spray additive system) is not restored to meet CTS requirements within specified completion times. CTS 3.3.B.3.a specifies that, if the reactor is critical when requirements are not met, then the reactor must be in hot shutdown (Mode 3) within 4 hours and cold shutdown (Mode 5) within the following 24 hours. However, if the reactor is subcritical when requirements are not met, CTS 3.3.B.3.b requires only that reactor coolant system temperature and pressure not be increased more than 25°F and 100 psi, respectively, over existing values with the requirement to proceed to cold shutdown (Mode 5) deferred by 48 hours.

Under the same conditions, ITS 3.6.7, Required Actions B.1 and B.2, require that the reactor be in Mode 3 in 6 hours (See ITS 3.6.7, DOC L.2) and in Mode 5 in 84 hours (See ITS 3.6.7, DOC L.2), regardless of the status of the unit when the Condition is identified. The allowance provided in CTS 3.3.B.3.b is deleted.

This change is needed to eliminate the ambiguity created by CTS 3.3.B.3.b when performing a reactor shutdown and cooldown required by CTS 3.3.B.3.a and to ensure that the plant is placed outside the LCO Applicability promptly when the LCO requirements are not met. This change is acceptable because placing the plant outside the LCO Applicability when LCO requirements are not met is conservative and there is no change in the CTS 3.3.B.3 requirement. This change has no significant adverse impact on safety.

M.4 CTS 3.3.B.1.a requires that the spray additive tank solution volume be maintained ≥ 4000 gallons; however, there is no requirement for the periodic verification that this requirement is met. ITS SR 3.6.7.2 is added to require verification every 184 days that requirements for the minimum solution volume in the spray additive tank are met. This change is needed because it requires periodic verification that spray additive tank requirements are met. This Surveillance Frequency is acceptable because of the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Additionally, the tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected. This change has no significant adverse impact on safety.

LESS RESTRICTIVE

L.1 CTS 3.3.B.1.a establishes requirements for the spray additive system. CTS 3.3.B.2.c specifies that any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to an operable status within 24 hours and all valves in the system that provide the duplicate function are operable. If the requirements of CTS 3.3.B.1.a are not met for any other reason, then CTS 3.3.B.3 requires initiation of a plant shutdown because no

other allowable out of service time (AOT)is specified.

Under the same conditions, ITS LCO 3.6.7, Required Action A.1, provides an AOT of 72 hours for an inoperable spray additive system before a reactor shutdown is required. This change is acceptable because the containment spray system still provides significant capability to remove iodine from the containment atmosphere in the event of a design basis accident even if the spray additive system is degraded or completely unavailable. Additionally, the containment Fan Cooler Unit System is also available for iodine removal from the containment atmosphere following an accident. The 72-hour Completion Time takes in the redundant flow path capabilities and the low probability of the worst case design basis accident during this period. Therefore, this change has no adverse impact on safety.

L.2 CTS 3.3.B.3 establishes the Actions required if either containment spray (including the spray additive system) and/or containment fan cooler trains are not restored to meet CTS requirements within specified completion times. CTS 3.3.B.3.a specifies that, if the reactor is critical when requirements are not met, then the reactor must be in hot shutdown (Mode 3) within 4 hours and cold shutdown (Mode 5) within the following 24 hours (See ITS 3.6.7, DOC M.3). Under the same conditions, ITS 3.6.7, Required Actions B.1 and B.2, require that the reactor be in Mode 3 in 6 hours and in Mode 5 in 84 hours.

This change is needed and is acceptable because placing the reactor in Mode 3 in 6 hours and in Mode 5 in 84 hours it allows additional time for attempting restoration of the containment spray additive system and is reasonable when considering the driving force for a release of radioactive material from the Reactor Coolant System is reduced in Mode 3. Therefore, this change has no significant adverse impact on safety.

L.3 CTS 3.3.B.1.a and CTS Table 4.1-2, Item 3, requires verification that the NaOH concentration in the spray additive tank is within required limits every month with the maximum time between analyses of 45 days. ITS SR 3.6.7.3 maintains the requirement that the NaOH concentration in the spray additive tank is within required limits; however, the Surveillance Frequency is extended to 184 days with the maximum time

that any substantial variance in tank volume will be detected. This change has no adverse impact on safety.

L.4 CTS 4.5.A.2.a specifies that system tests shall be performed at least once per 24 months. CTS 4.5.B.2.a requires that each spray additive valve be cycled at least once per 24 months. ITS SR 3.6.7.4 requires verification every 24 months that each automatic valve in the Spray Additive System flow path actuates to its correct position. ITS SR 3.6.7.4 explicitly excludes valves that are "locked, sealed, or otherwise secured in position." This change is acceptable because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the CTS. Therefore, this change has no impact on safety.

L.5 CTS 4.5.A.2.a requires a functional test of the containment spray system (including the spray additive system) and specifies that "operation of the system is initiated by tripping the normal actuation instrumentation." CTS 4.5.B.2.a requires cycling of spray additive valves "by operator action with the pumps shut down." ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system including valves; however, the test may be initiated by either an actual or simulated signal and may be performed with the pumps running. This change is acceptable because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. In addition, testing the spray additive system with the pumps running will not affect the performance of this test as the pumps will be running in response to an event. This is less restrictive change with no impact on safety because the use of an actual or simulated signal, and allowing the pumps to be running, does not change the validity of the test as a verification of plant response to the event.

L.6 CTS 4.5.A.2.a specifies requirements for a functional test of the spray additive system and CTS 4.5.A.2.c establishes the acceptance criteria for this test as "the tests will be considered satisfactory if visual observations indicate all components have operated satisfactorily." ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system; however, the statement that appropriate verification of system performance is limited to visual observations that all components

have operated is deleted. This change is acceptable because ITS SR 3.6.7.4 requires demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

- REMOVED DETAIL

LA.1 CTS 4.5.A.2.a specifies requirements for a functional test of the spray additive system and includes the requirement that "the tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed." ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system; however, the allowance permitting isolation valves to be closed is relocated to the Bases. This is acceptable because these valve are manual valves and not part of the test and the test is not intended to transfer NaOH from the storage tank into containment.

This change is acceptable because ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system. Maintaining details about allowed system lineups needed to prevent adverse consequences of the test in the Bases does not affect the requirement to verify system Operability. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the requirement to maintain the hydrogen recombiner Operability. This change is a less restrictive administrative change with no impact on safety.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.7:
"Spray Additive System"

PART 4:

No Significant Hazards Considerations
for
Changes between CTS and ITS
that are
Less Restrictive

No Significant Hazard Considerations for Changes that are Administrative, More Restrictive, and Removed Details are the same for all Packages. A Copy is included at the end of the Package.

NO SIGNIFICANT HAZARDS EVALUATION
ITS SECTION 3.6.7 - Spray Additive System

LESS RESTRICTIVE
("L.1" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 3.3.B.1.a establishes requirements for the spray additive system. CTS 3.3.B.2.c specifies that any valve required for the functioning of the system during and following accident conditions may be inoperable provided it is restored to an operable status within 24 hours and all valves in the system that provide the duplicate function are operable. If the requirements of CTS 3.3.B.1.a are not met for any other reason, then CTS 3.3.B.3 requires initiation of a plant shutdown because no other allowable out of service time (AOT)is specified. Under the same conditions, ITS LCO 3.6.7, Required Action A.1, provides an AOT of 72 hours for an inoperable spray additive system before a reactor shutdown is required.

   This change will not result in a significant increase in the probability of an accident previously evaluated because an inoperable spray additive system is not the precursor of any event. This change will not result in a significant increase in the consequences of an accident previously evaluated because the containment spray system still provides significant capability to remove iodine from the containment atmosphere in the event of a design basis accident even if the spray additive system is degraded or completely unavailable. Additionally, the containment Fan Cooler Unit System is also available for iodine removal from the containment atmosphere following an accident. The 72-hour Completion Time takes in the redundant flow path capabilities and the low probability of the worst case design basis accident during this period.

This change does not involve a significant reduction in a margin of safety because the spray additive system is a mitigating system that assists in reducing the iodine fission products inventory in the containment atmosphere resulting from a design basis accident. During the period the spray additive system is inoperable the containment spray system would still be available and would remove some iodine from the containment atmosphere in the event of a design basis accident. Also, the containment cooling and air filtration units would be available for iodine removal. The surveillance interval is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The 184-day Frequency is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

LESS RESTRICTIVE
("L.4" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a specifies requirements for a functional test of the spray additive system. CTS 4.5.B.2.a specifies the requirements for testing of spray additive system valves. ITS SR 3.6.7.4 maintains the requirement to demonstrate Operability of the spray additive system; however, ITS SR 3.6.7.4 explicitly excludes valves that are "locked, sealed, or otherwise secured in position."

This change will not result in an increase in the probability or consequences of an accident previously evaluated because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the CTS.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because valves that are "locked, sealed, or otherwise secured in position" do not change position as a result of an actuation signal and are not included in the test required by the CTS.

LESS RESTRICTIVE
("L.5" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a requires a functional test of the containment spray system (including the spray additive system) and specifies that "operation of the system is initiated by tripping the normal actuation instrumentation." CTS 4.5.B.2.a requires cycling of spray additive

valves "by operator action with the pumps shut down." ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system including valves; however, the test may be initiated by either an actual or simulated signal and may be performed with the pumps running.

This change will not result in an increase in the probability or consequences of an accident previously evaluated because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. In addition, testing the spray additive system with the pumps running will not affect the performance of this test as the pumps will be running in response to an event. The use of an actual or simulated signal, and allowing the pumps to be running, does not change the validity of the test as a verification of plant response to the event.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because use of an actual instead of a simulated or "test" signal will not affect the performance of the test because the equipment being tested cannot discriminate between an actual and simulated signal. In addition, testing the spray additive system with the pumps running will not affect the performance of this test as the pumps will be running in response to an event. The use of an actual or simulated signal, and allowing the pumps to be running, does not change the validity of the test as a verification of plant response to the event.

NO SIGNIFICANT HAZARDS EVALUATION
ITS SECTION 3.6.7 - Spray Additive System

LESS RESTRICTIVE
("L.6" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.A.2.a specifies requirements for a functional test of the spray additive system and CTS 4.5.A.2.c establishes the acceptance criteria for this test as "the tests will be considered satisfactory if visual observations indicate all components have operated satisfactorily." ITS SR 3.6.7.4 maintains the requirement for a functional test of the spray additive system; however, the statement that appropriate verification of system performance is limited to visual observations that all components have operated is deleted. This change is acceptable because

   This change will not result in an increase in the probability or consequences of an accident previously evaluated because ITS SR 3.6.7.4 requires demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

This change does not involve a significant reduction in a margin of safety because ITS SR 3.6.7.4 requires demonstrating Operability and this type of generic statement is generally not included in the acceptance criteria or either the CTS or ITS.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.7:
"Spray Additive System"

PART 5:

NUREG-1431
Annotated to show differences between
NUREG-1431 and ITS

Status of NUREG 1431 Generic Changes for ITS 3.6.7

This ITS Specification is based on NUREG-1431 Specification No. 3.6.7
as modified by the following Generic Changes:

OG No.	TSTF No.	Generic Change Description	NRC STATUS	IP3 STATUS	JD No.
N/A	N/A	NO GENERIC CHANGES ARE POSTED AGAINST THIS SPECIFICATION.	Not Applicable	Not Applicable	N/A

B 3.6 CONTAINMENT SYSTEMS

B 3.6.7 Spray Additive System ~~(Atmospheric, Subatmospheric, Ice Condenser, and Dual)~~

BASES

BACKGROUND

The Spray Additive System is a subsystem of the Containment Spray System that assists in reducing the iodine fission product inventory in the containment atmosphere resulting from a Design Basis Accident (DBA).

Radioiodine in its various forms is the fission product of primary concern in the evaluation of a DBA. It is absorbed by the spray from the containment atmosphere. To enhance the iodine absorption capacity of the spray, the spray solution is adjusted to an alkaline pH that promotes iodine hydrolysis, in which iodine is converted to nonvolatile forms. Because of its stability when exposed to radiation and elevated temperature, sodium hydroxide (NaOH) is the preferred spray additive. The NaOH added to the spray also ensures ~~a pH value of between 8.5 and 11.0~~ an alkaline pH of the solution recirculated from the containment sump. ~~This pH band~~ minimizes the evolution of iodine as well as the occurrence of chloride ~~and caustic~~ stress corrosion on mechanical systems and components. R.1

~~Eductor Feed Systems Only~~

The Spray Additive System consists of one containment spray additive tank that is shared by the two trains of spray additive equipment. Each train ~~of equipment~~ provides a flow path from the spray additive tank to a containment spray pump and consists of an eductor for each containment spray pump, valves, instrumentation, and connecting piping. Each eductor draws the NaOH spray solution from the common tank using a portion of the borated water discharged by the containment spray pump as the motive flow. The eductor mixes the NaOH solution and the borated water and discharges the mixture into the spray pump suction line. The eductors are designed to ensure that the pH of the spray mixture is between ~~8.5 and 11.0~~ 9.0 and 10.0

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.2

To provide effective iodine removal, the containment spray must be an alkaline solution. Since the RWST contents are normally acidic, the volume of the spray additive tank must provide a sufficient volume of spray additive to adjust pH for all water injected. This SR is performed to verify the availability of sufficient NaOH solution in the Spray Additive System. The 184 day Frequency was developed based on the low probability of an undetected change in tank volume occurring during the SR interval (the tank is isolated during normal unit operations). Tank level is also indicated and alarmed in the control room, so that there is high confidence that a substantial change in level would be detected.

SR 3.6.7.3

This SR provides verification of the NaOH concentration in the spray additive tank and is sufficient to ensure that the spray solution being injected into containment is at the correct pH level. The 184 day Frequency is sufficient to ensure that the concentration level of NaOH in the spray additive tank remains within the established limits. This is based on the low likelihood of an uncontrolled change in concentration (the tank is normally isolated) and the probability that any substantial variance in tank volume will be detected.

SR 3.6.7.4

Insert B3.6-113-01

R.1

24

This SR provides verification that each automatic valve in the Spray Additive System flow path actuates to its correct position. This Surveillance is not required for valves that are locked, sealed, or otherwise secured in the required position under administrative controls. The 18 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the Surveillance were performed with the reactor at power. Operating experience has shown that these components usually pass the Surveillance when performed at the 18 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint.

(continued)

NUREG-1431 Markup Inserts
ITS SECTION 3.6.7 - Spray Additive System

INSERT: 3.6-113-01

The test is performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed. | R1

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.7.5

To ensure that the correct pH level is established in the borated water solution provided by the Containment Spray System, ~~the~~ flow ~~rate~~ in the Spray Additive System is verified once every 5 years. This SR provides assurance that ~~the correct amount of~~ NaOH will be metered into the flow path upon Containment Spray System initiation. Due to the passive nature of the spray additive flow controls, the 5 year Frequency is sufficient to identify component degradation that may affect flow ~~rate~~.

Insert: B3.6-114-01

introduced

REFERENCES

1. FSAR, Chapter 15.

Chapters 6 and 14

NUREG-1431 Markup Inserts
ITS SECTION 3.6.7 - Spray Additive System

INSERT: 3.6-114-01

This test is satisfied by a verification of spray additive system flow without pumping any NaOH solution from the spray additive tank and without draining the spray additive tank. Water may be used in lieu of NaOH for the performance of this SR which is not intended to require the transfer of NaOH. R1

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.8:
"HYDROGEN RECOMBINERS"

PART 2:

CURRENT TECHNICAL SPECIFICATION PAGES

Annotated to show differences between CTS and ITS

CTS PAGE	AMENDMENT FOR REV O SUBMITTAL	AMENDMENT FOR REV 1 SUBMITTAL	COMMENT
3.3-12	115	115	
3.3-13	115	115	
3.3-19	145;97-175	145;9-22-98	Change to Bases Page
3.3-20	145	145	
4.5-6	130	130	
4.5-10	148	148	

SEE CTS RELOCATED

AND

1. Within 72 hours after identification of the inoperability of both installed monitoring channels, restore one monitoring channel to operable status.

OR

2. Submit a Special Report to the NRC pursuant to Technical Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the monitoring systems.

I. Electric Hydrogen Recombiner System LA.3 R.1

LCO 3.6.8 Applicability

1. Two ~~Independent~~ Hydrogen Recombiner Systems shall be OPERABLE ~~whenever the reactor T_{avg} exceeds 350°F~~ Mode 1 and 2 L.1

Req. Act A.1 ~~a.~~ With one Hydrogen Recombiner System inoperable, restore the inoperable system to operable status within 30 days, or be in the HOT SHUTDOWN CONDITION (Mode 3) within the next 6 hours ~~and subsequently reduce T_{avg} to less than or equal to 350°F within the following 30 hours~~ L.1

Req. Act B.1

Note to Req Act A.1 ~~b.~~ The reactor operating condition may be escalated while one Hydrogen Recombiner System is inoperable provided the requirements of section 3.3.I.1.a. above, are satisfied.

Amendment No. ~~34~~, ~~80~~, ~~98~~, ~~101~~, ~~108~~, 115

SEE ITS 5.5.10	(3)	A locally generated DOP test of the HEPA filters at ± 20% of the accident design flow rate and ambient conditions shall show ≥ 99% DOP removal.
	(4)	Visual inspection in accordance with the applicable sections of ANSI N 510 (1975) of filter installations.

7. Electric Hydrogen Recombiner Systems

a. Each hydrogen recombiner system shall be demonstrated OPERABLE:

SR 3.6.8.1

~~1)~~ At least once every 6 months by verifying, during a Hydrogen Recombiner System Functional test, that the minimum heater sheath temperature increases to greater than or equal to 700°F within 90 minutes. Upon reaching 700°F, increase the power setting to maximum power for 2 minutes and verify that the power meter reads greater than or equal to 60 kW, and LA.1

~~2)~~ At least once per 24 months by:

a) Performing CHANNEL CALIBRATION of all recombiner instrumentation and control circuits, LA.2

SR 3.6.8.2

~~b)~~ Verifying through a visual examination that there is no evidence of abnormal conditions within the recombiner enclosure (i.e., loose wiring or structural connections, deposits of foreign materials, etc.), and LA.1

SR 3.6.8.3

c) Verifying the integrity of all heater electrical circuits by performing a resistance to ground test ~~following the above required functional test~~. The resistance to ground for any heater phase shall be greater than or equal to 10,000 ohms. L.2 | R.1 LA.1

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.8:
"Hydrogen Recombiners"

PART 3:

DISCUSSION OF CHANGES

Differences between CTS and ITS

DISCUSSION OF CHANGES
ITS SECTION 3.6.8 - Hydrogen Recombiners

LESS RESTRICTIVE

L.1 CTS 3.3.I.1 requires that two independent hydrogen recombiner systems are operable whenever reactor Tavg exceeds 350°F (i.e., Modes 1, 2, and 3). ITS LCO 3.6.8 maintains the requirement that two independent hydrogen recombiner systems must be operable; however, this requirement is applicable only in Modes 1 and 2. In conjunction with this change, the actions for one or more inoperable hydrogen recombiners are changed to require only that the plant be placed in Mode 3 rather than reduce reactor Tavg to less than 350°F (i.e., Mode 4). This change, eliminating the requirement for hydrogen recombiner Operability in Mode 3, is acceptable because in Mode 3 the hydrogen production rate and the total hydrogen produced after a LOCA would be significantly less than that calculated for the design basis accident LOCA; therefore, hydrogen recombiners are not needed to maintain hydrogen concentration in containment to less than the flammability limit. Therefore, this change has no adverse impact on safety.

L.2 CTS 4.5.7.a.2.c requires periodic performance of a resistance to ground check of the hydrogen recombiners and includes a requirement that this test is performed after CTS 4.5.7.a.1 (functional test) and CTS 4.5.7.2.b (periodic inspections). ITS SR 3.6.8.3 maintains the requirement for periodic performance of a resistance to ground check of the hydrogen recombiners; however, the requirement to perform this test after the functional test (ITS SR 3.6.8.1) and after the inspections (ITS SR 3.6.8.2) is deleted. This is acceptable because the sequence for the performance of a functional test and resistance to ground test has no effect on the results of either test or the subsequent performance of the hydrogen recombiners. Therefore, this change has not impact on safety.

REMOVED DETAIL

LA.1 CTS 4.5.7.a.1 requires periodic performance of a functional test of the hydrogen recombiners and includes detailed acceptance criteria. ITS SR 3.6.8.1 maintains the requirement for periodic performance of a functional test of the hydrogen recombiners; however, the detailed acceptance criteria are relocated to the Bases for ITS SR 3.6.8.1.

CTS 4.5.7.a.2.b requires periodic inspections of the hydrogen recombiners and includes detailed acceptance criteria. ITS SR 3.6.8.2 maintains the requirement for inspections of the hydrogen recombiners; however, the detailed acceptance criteria are relocated to the Bases for ITS SR 3.6.8.2.

CTS 4.5.7.a.2.c requires periodic performance of a resistance to ground check of the hydrogen recombiners and includes detailed acceptance criteria. ITS SR 3.6.8.3 maintains the requirement for periodic performance of a resistance to ground check of the hydrogen recombiners; however, the detailed acceptance criteria are relocated to the Bases for ITS SR 3.6.8.3.

This change is acceptable because LCO 3.6.8 still requires that hydrogen recombiners are Operable and ITS SR 3.6.8.1, ITS SR 3.6.8.2 and ITS SR 3.6.8.3 still require periodic performance of tests designed to verify Operability. Therefore, the requirement to have hydrogen recombiners Operable is not changed. Therefore, this acceptance criteria which are design information can be adequately defined and controlled in the ITS Bases which require change control in accordance with ITS 5.5.12, Bases Control Program. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. The level of safety of facility operation is unaffected by the change because there is no change in the requirement to maintain the hydrogen recombiner Operability. This change is a less restrictive administrative change with no impact on safety.

LA.2 CTS 4.5.7.a.2.a requires performance of a channel calibration of all recombiners instrumentation and control circuits every 24 months. This requirement is not included in ITS 3.6.8, and is relocated to the Final Safety Analysis Report (FSAR) and implemented by plant procedures. This requirement can be relocated to the FSAR because the requirement that recombiners are Operable is included in LCO 3.6.8, and that operability is verified by the performance of the surveillance requirements.

This change is a less restrictive administrative change with no impact on safety because ITS 3.6.8 maintains the requirements to have hydrogen recombiners Operable and maintains the requirements to perform periodic

verification that demonstrates hydrogen recombiner Operability. Therefore, requirements to calibrate hydrogen recombiner instruments can be maintained in the FSAR with no significant adverse impact on safety.

LA.3 CTS 3.3.I.1 requires that two independent hydrogen recombiner systems are operable. ITS LCO 3.6.8 maintains the requirement that two hydrogen recombiner systems must be operable; however, the clarification that these systems are independent is relocated to the ITS 3.6.8 Bases.

This change is acceptable because the requirement to maintain the requirement that two hydrogen recombiner systems must be operable and there are only two hydrogen recombiner systems in the plant. The design information that these two hydrogen recombiner systems are required to be independent is maintained in the Bases because it is design information. The Technical Specification Bases are subject to change control in accordance with ITS 5.5.12, Bases Control Program. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. This change is a less restrictive administrative change with no impact on safety.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.8:
"Hydrogen Recombiners"

PART 4:

No Significant Hazards Considerations for Changes between CTS and ITS that are Less Restrictive

No Significant Hazard Considerations for Changes that are Administrative, More Restrictive, and Removed Details are the same for all Packages. A Copy is included at the end of the Package.

LESS RESTRICTIVE
("L.2" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   CTS 4.5.7.a.2.c requires periodic performance of a resistance to ground check of the hydrogen recombiners and includes a requirement that this test is performed after CTS 4.5.7.a.1 (functional test) and CTS 4.5.7.2.b (periodic inspections). ITS SR 3.6.8.3 maintains the requirement for periodic performance of a resistance to ground check of the hydrogen recombiners; however, the requirement to perform this test after the functional test (ITS SR 3.6.8.1) and after the inspections (ITS SR 3.6.8.2) is deleted. This change will not result in a significant increase in the probability or consequences of an accident previously evaluated because the sequence for the performance of a functional test and resistance to ground test has no effect on the results of either test or the subsequent performance of the hydrogen recombiners.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in a margin of safety because the sequence for the performance of a functional test and resistance to ground test has no effect on the results of either test or the subsequent performance of the hydrogen recombiners.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.9:
"Isolation Valve Seal Water (IVSW) System"

PART 1:

Indian Point 3
Improved Technical Specifications and Bases

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.9.1	Verify IVSW tank pressure is ≥ 47 psig.	24 hours
SR 3.6.9.2	Verify IVSW nitrogen supply bank is pressurized with: a. one cylinder with pressure ≥ 1048 psig; or b. two cylinders with pressure ≥ 584 psig; or c. three cylinders with pressure ≥ 430 psig.	24 hours NYPA
SR 3.6.9.3	Verify the IVSW tank water volume is ≥ 144 gallons.	24 hours
SR 3.6.9.4	Verify the opening time of each air operated header injection valve is within limits.	24 months NYPA
SR 3.6.9.5	Verify each automatic valve in the IVSW System actuates to the correct position on an actual or simulated actuation signal.	24 months
SR 3.6.9.6	Verify the leakage rate of water from the Isolation Valve Seal Water System is within limits.	In accordance with the Containment Leakage Rate Testing Program.

BASES

BACKGROUND (continued)

testing, Indian Point 3 elected to consider IVSW as a seal system as described in 10 CFR 50, Appendix J, (Ref. 3). This election allows leakage through CIVs sealed by IVSW to be excluded when calculating Type B and C testing results. Therefore, operation of IVSW is an implicit assumption in the calculation of post accident offsite radiation doses.

To satisfy the requirements of 10 CFR 50, Appendix J, for excluding leakage from CIVs sealed by IVSW from Type B and C limits, Technical Specifications must ensure the IVSW sealing function (i.e., both sealing water supply and nitrogen gas supply) is maintained at a pressure of 1.10 P_a for at least 30 days.

Sealing water design capacity is sufficient to maintain a source of seal water at the required pressure for a minimum of 24 hours without operator intervention assuming worst case leakage and the single failure of a CIV sealed by IVSW. The requirements for a 24 hour supply of seal water under worst case conditions is satisfied by maintaining a minimum of 144 gallons in the 176 gallon capacity seal water tank.

Nitrogen gas for IVSW seal water pressurization is satisfied by having three compressed nitrogen bottles in the IVSW supply bank aligned to the IVSW supply tank.

To satisfy the requirement of 10 CFR 50, Appendix J, (Ref. 3) for maintaining the IVSW sealing function for at least 30 days, manual operator action may be required to replenish the IVSW seal water supply and/or compressed gas supply. Two sources of makeup water and two alternate sources of compressed gas with sufficient capacity to maintain the IVSW sealing function for 30 days are available. The two sources of makeup water are the primary water storage tank and the city water system. The two alternate sources of compressed gas are the normally isolated nitrogen gas bottles in the nitrogen supply bank and the ability to refill or replace the IVSW nitrogen supply bottles from the plant Nitrogen System. Manual operations required to supply makeup water and gas to the IVSW system are performed in an area that is NYPA

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.6.9.2

This SR ensures the capability of the IVSW nitrogen source to pressurize the IVSW system as needed to support IVSW operation for a minimum of 30 days. Verification of the IVSW tank pressure on a Frequency of once per 24 hours is acceptable because operating experience has shown this Frequency to be appropriate for early detection and correction of off normal trends.

SR 3.6.9.3

This SR verifies the IVSW tank has an initial volume of water necessary to provide seal water to the containment isolation valves served by the IVSW System for a period of at least 24 hours assuming the failure of one CIV and the maximum allowed leakage past other CIVs served by IVSW. Verification of IVSW tank level on a Frequency of once per 24 hours is acceptable since tank level is monitored by installed instrumentation and will alarm in the Primary Auxiliary Building prior to level decreasing to 20 gallons which provides sufficient time to re-fill the tank before it is depleted. NYPA

SR 3.6.9.4

This SR verifies the stroke time of each automatic IVSW header injection solenoid valve is within limits. The frequency is 24 months. Previous operating experience has shown that these valves usually pass the required test when performed. NYPA

SR 3.6.9.5

This SR ensures that automatic header injection valves actuate to the correct position on a simulated or actual signal. The 24 month Frequency is based on the need to perform this Surveillance under the conditions that apply during a plant outage and the potential for an unplanned transient if the

(continued)

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.9:
"ISOLATION VALVE SEAL WATER (IVSW) SYSTEM"

PART 2:

CURRENT TECHNICAL SPECIFICATION PAGES

Annotated to show differences between CTS and ITS

CTS PAGE	AMENDMENT FOR REV O SUBMITTAL	AMENDMENT FOR REV 1 SUBMITTAL	COMMENT
3.3-7	132	132	
4.4-4	174	195	Reference to CIV Table Deleted. No impact on 3.6.9
4.4-9	174	174	

A.1

C. Isolation Valve Seal Water System (IVSWS)

Mode 1, 2, 3 and 4 — A3

1. The reactor shall not be brought above cold shutdown ~~unless~~ the following requirements are met:

LCO 3.6.9

a. The IVSWS shall be operable.

b. The IVSW tank shall be maintained at a minimum pressure of 47 psig and contain a minimum of 144 gallons of water.

and verified every ~~7 days~~ 24 hours — M.2

SR 3.6.9.1
SR 3.6.9.3

2. The requirements of 3.3.C.1 may be modified to allow any one of the following components to be inoperable at any one time:

Cond A &
Req. Act A.1

a. Any one header of the IVSWS may be inoperable for a period not to exceed 7 consecutive days.

b. Any valve required for the functioning of the system during and following accident conditions provided it is restored to an operable status within 7 days ~~and all valves in the system that provide a duplicate function are operable.~~ — LA.1 | R.1

Cond C

~~3.~~ If the IVSW System is not restored to an operable status within the time period specified, then:

Req Act C.1

~~a.~~ If the reactor is critical, it shall be brought to the hot shutdown condition ~~utilizing normal operating procedures~~. ~~The shutdown shall start no later than at the end of the specified time period~~ — A4

6 hours — M.4 | R.1

b. ~~If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values.~~

c. ~~In either case, if the IVSW System is not restored to an operable status within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.~~

Add Req. Act. C.2 — M.1

Add Cond B and associated Req. Act. — L.1

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.9:
"Isolation Valve Seal Water (IVSW) System"

PART 3:

DISCUSSION OF CHANGES

Differences between CTS and ITS

A.4 CTS 3.3.C.3.a specifies that, if the IVSW System is not restored to Operable within a specified completion time, then the reactor shall be brought to hot shutdown (i.e., Mode 3) utilizing normal operating procedures and that the shutdown shall start no later than the end of the specified period (i.e., the time allowed to restore IVSW to Operable). The statement that "the shutdown shall start no later than the end of the specified period" is deleted because the requirement is established by ITS 1.3, Completion Times, which specifies completion time clocks always start as soon as applicable requirements are not met. This is an administrative change with no impact on safety because the statement being deleted is maintained by ITS 1.3, Completion Times.

MORE RESTRICTIVE

M.1 CTS 3.3.C.3.a specifies that if the IVSW System is not restored to an operable status within the time period specified, then the reactor shall be brought to the hot standby condition utilizing normal operating procedures. Thereafter, CTS 3.3.C.3.b and c allow an additional 48 hours to restore IVSW before the reactor must be placed in cold shutdown (i.e., Mode 5). ITS LCO 3.6.9, Required Action C.1, maintains the requirement to be in hot shutdown condition utilizing normal operating procedures (See ITS 3.6.9, DOC M.4); however, Required Action C.2, requires that the plant be in Mode 5 in 36 hours (i.e., the 48 hour allowable out of service time in Mode 3 is deleted). This change is needed and is acceptable because the plant must be placed outside the applicable Mode promptly when LCO requirements are not met.

In conjunction with this change, the requirement in CTS 3.3.C.3.b (i.e., reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values during the 48 hour AOT provided by CTS 3.3.C.3.b) is deleted. This change is necessary and acceptable because the 48 hour AOT provided by CTS 3.3.C.3.b is being deleted. Therefore, this change has no adverse impact on safety.

M.2 CTS 3.3.C.1.b requires that IVSW tank be maintained at a minimum pressure of 47 psig and contain a minimum of 144 gallons of water;

however, there is no requirement for periodic verification that these requirements are met. ITS LCO 3.6.9 maintains the requirement to keep these parameters within specified limits; however, ITS SR 3.6.9.1 and SR 3.6.9.3 are added to require verification every 24 hours that these parameters are within limits. Verification of the IVSW tank pressure and level on a Frequency of once per 24 hours is acceptable because tank level and pressure are monitored by installed instrumentation and will alarm in the Primary Auxiliary Building when below required limits. This more restrictive change is acceptable because it requires periodic verification that IVSW system parameters are within limits with no impact on any other aspect of plant safety.

M.3 CTS 3.3.C does not include a specific requirement for periodic verification that IVSW nitrogen supply is available to support IVSW operation. ITS SR 3.6.9.2 adds a requirement to verify every 24 hours the IVSW nitrogen supply is aligned as follows: one cylinder with pressure ≥ 1048 psig; or two cylinders with pressure ≥ 584 psig; or three cylinders with pressure ≥ 430 psig. This criteria ensures that sufficient nitrogen is available to maintain the IVSW system at the required pressure for a minimum of 24 hours.

CTS 3.3.C does not include a specific requirement to verify the opening time of automatic valves in the IVSW System actuates. ITS SR 3.6.9.4 adds a requirement to verify valves actuate within the required time limits at least once every 24 months.

CTS 3.3.C does not include a specific requirement to verify each automatic valve in the IVSW System actuates to the correct position on an actual or simulated actuation signal. ITS SR 3.6.9.5 adds a requirement to verify proper operation of each automatic valve in the IVSW System every 24 months.

These more restrictive changes are acceptable because they require periodic verification that IVSW system will function as required following containment isolation with no impact on any other aspect of plant safety.

M.4 CTS 3.3.C.3.a specifies that, if the IVSW System is not restored to Operable within a specified completion time, then the reactor shall be brought to hot shutdown (i.e., Mode 3) utilizing normal operating procedures and that the shutdown shall start no later than the end of the specified period (i.e., the time allowed to restore IVSW to Operable). Under the same conditions, ITS LCO 3.6.9, Required Action C.1, requires the plant be in Mode 3 in 6 hours. Although 6 hours is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems, the ITS Completion time of 6 hours to reach Mode 3 is more restrictive than the requirement to utilize normal operating procedures because the CTS completion time could vary based on initial plant conditions. Additionally, as explained in ITS 1.3, Completion Times, completion time clocks always start as soon as applicable requirements are not met. This change is acceptable because it is an explicit statement of a reasonable interpretation of the existing requirement.

LESS RESTRICTIVE

L.1 CTS 3.3.C.2 provides an allowable out of service time (AOT) if one IVSW system header inoperable or if one IVSW automatic actuation valve inoperable; however, no AOT is provided for IVSW inoperability for any other reason (e.g., water level low, nitrogen pressure low, etc). Therefore, CTS 3.0 would require immediate shutdown under these conditions. ITS LCO 3.6.9 maintains the 7 day AOT if one IVSW system header inoperable or if one IVSW automatic actuation valve inoperable; however, ITS LCO 3.6.9, Condition B and associated Required Action, establish a 24 hour AOT if IVSW is inoperable for any reason other than Condition A. This change is needed because it eliminates a requirement for an immediate plant shutdown for numerous conditions that can either be resolved very quickly or do not merit plant shutdown. This change is acceptable because the CIVs associated with IVSW are still Operable and will still close and the affected CIVs provided adequate isolation to meet containment isolation requirements without IVSW during the most recent Type A test. Additionally, except in the unusual case where inoperability is the result of failure to meet SR 3.6.9.5, the affected CIVs have demonstrated the ability to satisfy IVSW leakage requirements

using IVSW seal water in lieu of meeting Type C testing requirements. Therefore, the 24 hours is allowed to restore the IVSW System to OPERABLE status. Finally, the Safety Function Determination Program (SFDP) required by ITS 5.5.14 will ensure that appropriate actions are taken if loss of IVSW results in a loss of function for one or more CIVs. This program ensures loss of safety function is detected and appropriate actions taken. Therefore, this change has no adverse impact on safety.

REMOVED DETAIL

LA.1 CTS 3.3.C.2.b which specifies that an automatic valve in the IVSW system may be inoperable for 7 days provided "all valves in the system that provide a duplicate function are operable." ITS 3.6.9, Condition A, addresses "One IVSW automatic actuation valve inoperable" with no allowance for separate condition entry which means that Condition A does not apply unless all valves in the system that provide a duplicate function are operable. The Bases for ITS 3.6.9, Condition A, clarifies this point with the statement "With one IVSW automatic actuation valve inoperable, the IVSW function is still available because the redundant automatic actuation valve is OPERABLE.

This change is acceptable because ITS 3.6.9, Condition A, addresses "One IVSW automatic actuation valve inoperable" with no allowance for separate condition entry which means that Condition A does not apply unless all valves in the system that provide a duplicate function are operable. The Technical Specification Bases are subject to change control in accordance with ITS 5.5.12, Bases Control Program. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. This change is a less restrictive administrative change with no impact on safety.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.10:
"Weld Channel and Penetration Pressurization System"

PART 1:

Indian Point 3
Improved Technical Specifications and Bases

3.6 CONTAINMENT SYSTEMS

3.6.10 Weld Channel and Penetration Pressurization System (WC&PPS)

LCO 3.6.10 Weld Channel and Penetration Pressurization System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTES----------

1. Separate Condition entry is allowed for each component supplied by WC&PPS.

2. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when the overall containment leakage rate acceptance criteria is exceeded.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more components supplied by WC&PPS not within the pressure limit of SR 3.6.10.1.	A.1 Isolate the WC&PPS supply to the affected components by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. AND	4 hours (continued)

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	
	Verify the WC&PPS supply to the affected component is isolated.	Once per 31 days for isolation devices outside containment not locked, sealed or otherwise secured AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
B. WC&PPS air consumption not within the limits of SR 3.6.10.2.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves."	1 hour from discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported containment isolation valves
	AND	(continued)

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)	B.2	Enter applicable Conditions and Required Actions of LCO 3.6.2, "Containment Air Locks."	1 hour from discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported air lock
	AND		
	B.3	--------NOTE--------- Enter condition A for components not within the pressure limit of SR 3.6.10.1. ----------	
		Isolate portions of WC&PPS to restore air consumption to within limits of SR 3.6.10.2.	7 days
C. Required Action and associated Completion Time not met.	C.1	Be in MODE 3.	6 hours
	AND		
	C.2	Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.10.1	Verify all required portions of each WC& PPS zone is pressurized to ≥ 43 psig.	31 days
SR 3.6.10.2	Verify the WC&PPS air consumption is ≤ 0.2% of the containment free volume per day.	31 days
SR 3.6.10.3	Verify the leakage rate for the WC&PPS is ≤ 0.2% of the containment free volume per day when pressurized to ≥ 43 psi above containment pressure.	-----NOTE------ SR 3.0.2 is not applicable ---------- 36 months

B 3.6 CONTAINMENT SYSTEMS

3.6.10 Weld Channel and Penetration Pressurization System

BASES

BACKGROUND

The Weld Channel and Penetration Pressurization System (WC&PPS) is designed to continuously pressurize the double penetration barriers used at locations where plant systems penetrate the containment boundary, the space between selected isolation valves, and most of the weld seam channels installed on the inside of the liner of the Containment. Continuous pressurization by the WC&PPS provides a continuous, sensitive, and accurate means of monitoring their status with respect to leakage. Additionally, the WC&PPS is maintained at a pressure above the containment peak accident pressure so that any postulated leakage past the monitored barriers will be into the containment rather than out of the containment. The design basis leakage rate from the WC&PPS is 0.2% of containment free volume per day which assumes leakage of 0.1% of containment free volume per day into the containment and an identical amount leaking to the environment. Following a design basis accident, the system will maintain pressure greater than the post accident containment pressure for 24 hours (Ref. 1).

The WC&PPS is divided into four independent zones to simplify the process of locating leaks during operation. If one zone has a leak during operation, the specific penetration, weld channel, or containment isolation valve (CIV) containing the leak can be identified by isolating the individual air supply line to each component in the zone. Additionally, a capped tube connection installed in each line allows injecting leak test gas (Ref. 1).

The instrument air system provides a regulated supply of clean and dry compressed air for the WC&PPS. Two instrument air compressors are used, although only one is required to maintain pressurization at the maximum allowable leakage rate of the

(continued)

BASES

BACKGROUND (continued)

WC&PPS. A backup source of air for the WC&PPS is the station air system which includes at least one station air compressor. Each WC&PPS zone is served by its own air receiver which will continue to supply air to the zone if the instrument air system and station air system are lost. Each of the air receivers is sized to supply air to its zone for a period of at least one hour based on a total leakage rate of 0.2% of the containment free volume per day. If the receivers are exhausted before normal and backup air supplies are restored, additional backup is provided by a bank of nitrogen cylinders. The nitrogen backup system will automatically deliver nitrogen at a pressure slightly lower than the normal regulated air supply. Thus, in the event of failure of the normal and backup air supply systems during periods when the system is in operation, WC&PPS pressure requirements will be automatically maintained by the nitrogen supply. This assures reliable pressurization under both normal and accident conditions. The combination of the air receivers and nitrogen supply is sufficient to ensure WC&PPS pressure is above the peak containment pressure at the start of a LOCA and to maintain WC&PPS above the post-LOCA containment pressure profile for the 24 hour period following a LOCA at the design leakage rate of 0.2% of the containment free volume per day.

Pressure control valves, isolation valves and check valves are generally located outside of the containment for ease of inspection and maintenance. The line to each of the four pressurized zones is equipped with a critical pressure drop orifice to assure that air consumption will be within the capacity of the system and that high air consumption in one zone does not affect the operation of the other zones. Additionally, restricting orifices are installed on pressurization lines, where required, to assure that air consumption, even on failure of an individual line, will not result in loss of pressure to the other components connected to the same pressurization header.

All pressurized components have provisions for either local pressure indication, mounted outside the Containment, or remote low pressure alarms in the Control Room. The actuating pressure for each pressure alarm is set above incident pressure and below the nitrogen supply regulator setting.

(continued)

BASES

BACKGROUND (continued)

WC&PPS air consumption is continuously monitored by a flow sensing device located in each of the headers supplying makeup air to the four WC&PPS zones. Output from these sensors is applied to a summing amplifier which drives a total flow recorder. The flow measurement range is 0-15 scfm with an accuracy of ± 1% of full scale. High flow alarms in the Control Room are derived from the recording channel. With the WC&PPS at 43 psig and the containment at approximately atmospheric pressure, an indicated WC&PPS flow rate of 14.2 scfm is equivalent to the WC&PPS design leakage limit. A WC&PPS flow rate of 14.2 scfm, if sustained for 24 hours, is equivalent to 0.2% of the containment free volume at a pressure of 43 psig.

APPLICABLE SAFETY ANALYSES

For Indian Point 3, offsite dose calculations demonstrate compliance with 10 CFR 100 guidelines and the results are well within those guidelines. In these calculations, it is assumed that the Containment leaks at a rate of 0.1% per day of Containment free volume for the first 24 hours and 0.05% per day of Containment free volume thereafter. No credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations because the integrated leakage rate tests required by Specification 5.15, Containment Leakage Rate Testing Program, are performed with the double penetration and weld channel zones open to the containment atmosphere. However, WC&PPS does provide an additional means for ensuring that containment leakage is minimized (Ref. 3).

A design function of WC&PPS is to provide a continuous, sensitive, and accurate means of monitoring leakage of selected containment isolation valves (CIVs), the air lock door seals, and containment welds that are pressurized by this system. WC&PPS leakage, even if below the WC&PPS design leakage rate, may indicate that one of these supported components is exceeding its leakage rate acceptance criteria. In this situation, the supported component may be inoperable and the APPLICABLE SAFETY ANALYSES for the supported component is applicable.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

Specification 5.15, Containment Leakage Rate Testing Program, allows an exemption to Regulatory Guide 1.163, "Performance-Based Containment Leak Test Program, and ANS 56.8-1994, Section 3.3.1, in that WC&PPS supply isolation valves are not required to be Type C tested. Note that the WC&PPS supply isolation valves are normally open valves. As specified in Reference 2, operating with these valves normally open and the exemption from type C testing is acceptable because: (1) the WC&PPS is monitored for changes to the system leakage rate; (2) the WC&PPS leakage rate is quantified every 36 months; and, (3) WC&PPS pressure is maintained higher than the containment peak accident pressure (Ref. 2). Therefore, if the required pressure is not maintained or excessive WC&PPS leakage is identified, then compensatory actions are required to ensure the containment boundary is maintained.

For containment isolation valves (CIVs) supported by WC&PPS, WC&PPS pressurization is applied to the space between those CIVs that are normally closed. CIVs supported by WC&PPS are Type C tested in accordance with Specification 5.5.15 because WC&PPS is not credited as a seal system. For loss of WC&PPS pressurization, isolation of the WC&PPS supply to the affected CIVs provides appropriate compensatory action because the supported CIVs are a tested boundary and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path. For high WC&PPS air consumption, a consideration is that the leakage may indicate that a supported CIV is exceeding its leakage rate acceptance criteria. If the leakage path is isolated from the supported CIVs when the WC&PPS supply to the CIV is isolated, isolation of the WC&PPS supply to the CIV restores the required safety function. If the leakage path is not isolated from the supported CIV when the WC&PPS supply to the CIV is isolated (i.e., the CIV is depressurized), the supported CIV may be inoperable and the requirements of LCO 3.6.3, "Containment Isolation Valves," are applicable.

For the containment air lock door seals supported by WC&PPS, WC&PPS pressurization is normally applied to the space between the double gaskets on each of the airlock seals. Air lock

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

operability does not require pressurization of the air lock door seals except as needed to verify the seals have reseated after each air lock door is operated (see LCO 3.6.2, "Containment Air Locks"). For loss of WC&PPS pressurization, isolation of the WC&PPS supply to the affected air lock door seals provides appropriate compensatory action because pressurization is not required for air lock operability (except as needed to verify the seals have reseated after each air lock door is operated) and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path. For high WC&PPS air consumption, a consideration is that the leakage may indicate that a supported air lock seal is exceeding its leakage rate acceptance criteria. If the leakage path is isolated from the supported air lock when the WC&PPS supply to the air lock is isolated, isolation of the WC&PPS supply to the air lock restores the required safety function. If the leakage path is not isolated from the supported air lock seal when the WC&PPS supply to the air lock seal is isolated, the supported air lock may be inoperable and the requirements of LCO 3.6.2, "Containment Air Locks," are applicable.

For weld channels and piping penetrations supported by WC&PPS, WC&PPS pressurizes what is equivalent to a closed system inside containment. Because it is reasonable to assume that WC&PPS leakage is not the result of a containment weld or piping penetration defect, WC&PPS leakage and/or lack of pressurization is a concern only because it presents a potential leakage path from containment to the atmosphere via the depressurized WC&PPS. Therefore, isolation of the WC&PPS supply to the affected section of weld channel or piping penetration provides appropriate compensatory action for both loss of pressurization and air consumption caused by flow from the WC&PPS into containment. This assumes that containment leakage rate testing required by Specification 5.15 provides a high degree of assurance that WC&PPS air consumption is not indicative of deterioration of the containment boundary.

WC&PPS satisfies Criterion 3 of 10 CFR 50.36 where it is used to pressurize the space between selected CIVs and pressurize air

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

lock door seals. The WC&PPS system, if not maintained at the required pressure, represents a potential leakage path to the environment if there is a single failure of a supported CIV or air lock seal.

WC&PPS satisfies Criterion 4 of 10 CFR 50.36 it provides an additional means for ensuring that containment leakage is minimized although no credit is taken for the WC&PPS in calculating offsite dose for meeting 10 CFR 100 and GDC 19.

LCO

This LCO requires that the WC&PPS be OPERABLE. OPERABILITY requires the following: all required portions of each WC&PPS zone are pressurized to a value that exceeds peak containment pressure during a design basis accident; and, total leakage (i.e., air consumption) from the required portions of the WC&PPS are within specified limits. Limits for air consumption are based on the integrated containment leak rate test acceptance criterion and the ability of the reserve air supplies in the air receivers and nitrogen cylinders to maintain WC&PPS pressure above calculated containment pressure for a minimum of 24 hours following an event.

For a portion of the WC&PPS to be considered not required, it must meet all of the following criteria: 1) it must be inoperable (i.e., can not maintain a pressure above required limits and/or cause system air consumption to exceed required limits); 2) it must be isolated or disconnected from the system; and, 3) it must have been determined by written evaluation as not practicably accessible for repair.

Inoperable sections of WC&PPS piping which can be considered as not practicably accessible for repair will satisfy one of the following criteria: 1) the piping is covered by concrete and repairs of the piping would involve the removal of some portion of the containment structure; or, 2) the piping is located behind plant equipment in the containment building and repairs of the piping would involve the relocation of the equipment.

(continued)

BASES

LCO (continued)

The integrity of the welds associated with any disconnected or isolated portions of the WC&PPS is considered verified by integrated leak rate testing performed in accordance with Specification 5.15. The provision that allows for the disconnection of portions of the WC&PPS piping does not apply to any other WC&PPS piping.

APPLICABILITY

In MODES 1, 2, 3, and 4, a DBA could cause a release of radioactive material to containment. WC&PPS is required to support OPERABILITY of the containment, containment air locks, and selected containment isolation valves. In MODES 5 and 6, OPERABILITY of the containment, containment air locks, and containment isolation valves is not required. Therefore, the WC&PPS is not required to be OPERABLE in MODES 5 and 6.

ACTIONS

The ACTIONS are modified by two Notes. Note 1 is added to clarify that Separate Condition entry is allowed for each component supplied by WC&PPS. This is acceptable because the Required Actions for each Condition provide appropriate compensatory actions for each component supported by WC&PPS. Complying with the Required Actions may allow for continued operation, and subsequent inoperable WC&PPS components are governed by subsequent Condition entry and application of associated Required Actions.

Note 2 is added to direct entry into the applicable Conditions and Required Actions of LCO 3.6.1, "Containment," if it is determined that WC&PPS inoperability is indicative of exceeding the overall containment leakage rate. Note that entry into the Conditions and Required Actions of LCO 3.6.1 may be required even if WC&PPS air consumption limits are not exceeded.

A.1 and A.2

In the event one or more components supplied by WC&PPS is not within the pressure limit of SR 3.6.10.1, Required Action A.1 requires that the WC&PPS supply to the affected weld channels, penetrations, or containment isolation valves must be isolated within 4 hours. Required Action A.1 is needed because isolation

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

of the WC&PPS supply to the affected component results in using an isolation valve as a substitute for pressurization. This prevents the WC&PPS from becoming a potential leakage path from the containment to the atmosphere. This action satisfies the required safety function because the leakage rate testing performed in accordance with Specification 5.15 has already verified that the containment leakage rate is within required limits without crediting the WC&PPS.

The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, a blind flange (including Swagelok fittings), and a check valve with flow through the valve secured (Ref. 3). For a WC&PPS supply isolated in accordance with Required Action A.1, the device used to isolate the weld channel, penetration or containment isolation valves should be the closest available to component. Required Action A.1 must be completed within 4 hours. The 4 hour Completion Time is reasonable, considering the time required to isolate the penetration and the relative importance of supporting containment OPERABILITY during MODES 1, 2, 3, and 4.

If a WC&PPS supply cannot be restored to OPERABLE status within the 4 hour Completion Time and is isolated in accordance with Required Action A.1, the affected penetration flow paths must be verified to be isolated on a periodic basis. This is necessary to ensure that containment penetrations required to be isolated following an accident and not pressurized by WC&PPS will be in the isolation position should an event occur. Required Action A.2 does not require any testing or device manipulation. This action involves verification, through a system walkdown, that isolation devices outside containment and capable of being mispositioned are in the correct position. The Completion Time of "once per 31 days for isolation devices outside containment" and exempting valves that are locked, sealed or otherwise secured in the required position is appropriate considering the fact that the devices are operated under administrative controls and the

(continued)

BASES

ACTIONS

A.1 and A.2 (continued)

probability of their misalignment is low. For the isolation devices inside containment, the time period specified as "prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days" is based on engineering judgment and is considered reasonable in view of the inaccessibility of the isolation devices and other administrative controls that will ensure that isolation device misalignment is an unlikely possibility.

Required Action A.2 is modified by a Note that applies to isolation devices located in high radiation areas and allows these devices to be verified closed by use of administrative means. Allowing verification by administrative means is considered acceptable, since access to these areas is typically restricted. Therefore, the probability of misalignment of these devices, once they have been verified to be in the proper position, is small.

B.1, B.2 and B.3

Condition B applies if WC&PPS has air consumption that places the WC&PPS outside the limits of SR 3.6.10.2. In this condition, Required Action B.3 requires that portions of the WC&PPS are isolated, as necessary, to restore WC&PPS leakage to within the limits of SR 3.6.10.2. However, safety function is not restored until any portions of the WC&PPS that are depressurized by this Action are isolated. Therefore, Required Action B.3, is modified by a Note that requires entry into Condition A for components not within the pressure limit of SR 3.6.10.1 as a result of isolating the leakage path. The Completion Time of 7 days to isolate the leakage path is acceptable because all un-isolated portions of the WC&PPS are pressurized, otherwise, Condition A is applicable immediately. Safety function is restored when leaking portions of the WC&PPS are isolated and at least one isolation device separates the containment barrier from the WC&PPS leakage path. If leakage exceeds 0.2%, then replenishment would be required before 24 hours, during an accident.

(continued)

BASES

ACTIONS

B.1, B.2 and B.3 (continued)

As discussed in the Applicable Safety Analyses above, safety function is not restored by Required Action B.3 if the air consumption leakage path is depressurized but not isolated from the supported containment isolation valves or containment air lock seal. In this situation, the WC&PPS air consumption leakage path could create a leakage path from containment to the atmosphere. Therefore, Required Action B.1 requires entry into the applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves" within 1 hour of discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported containment isolation valves. Likewise, Required Action B.2 requires entry into the applicable Conditions and Required Actions of LCO 3.6.2, "Containment Air Locks" within 1 hour of discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported air locks. The Required Actions of LCO 3.6.2 and LCO 3.6.3 will restore safety function for WC&PPS air consumption leakage path that is depressurized.

C.1 and C.2

If the Required Actions and associated Completion Times are not met, the plant must be brought to a MODE in which the LCO does not apply. To achieve this status, the plant must be brought to at least MODE 3 within 6 hours and to MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required plant conditions from full power conditions in an orderly manner and without challenging plant systems.

SURVEILLANCE REQUIREMENTS

SR 3.6.10.1

This SR requires periodic verification during plant operation that the required portions of each WC& PPS zone are maintained at a pressure greater than the containment peak accident pressure.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

SR 3.6.10.1 (continued)

This SR is satisfied by verification of zone pressure on each of the four WC&PPS zones is above the specified limit. The 31 day Frequency is acceptable because there are low pressure alarms in the Control Room to ensure that operators are aware that all WC&PPS zones are pressurized.

SR 3.6.10.2

This SR requires periodic verification during plant operation that the WC&PPS air consumption is ≤ 0.2% of the containment free volume per day. This SR is performed by taking the sum of the reading on the flow sensing devices located in each of the zone headers. A WC&PPS flow rate of 14.2 scfm, if sustained for 24 hours, is equivalent to 0.2% of the containment free volume at a pressure of 43 psig. The 31 day Frequency recognizes that WC&PPS air consumption indication and high flow alarms are provided in the control room.

SR 3.6.10.3

This SR, sometimes called the sensitive leak rate test, ensures that the leakage rate for the WC&PPS is ≤ 0.2% of the containment free volume per day when pressurized to ≥ 43 psig above containment pressure. The sensitive leak rate test includes only the volume of the weld channels, double penetrations, and containment isolation valves supported by WC&PPS. This test is considered more sensitive than the integrated leakage rate test, as the instrumentation used permits a direct measurement of leakage from the pressurized zones. The 36 month Frequency is acceptable because experience has shown that the WC&PPS usually passes this Surveillance when performed at the 36 month Frequency. Therefore, the Frequency was concluded to be acceptable from a reliability standpoint. The Frequency is modified by a Note indicating that SR 3.0.2 is not applicable.

(continued)

BASES (continued)

REFERENCES

1. FSAR, Section 6.6.

2. Safety Evaluation Report for IP3 Amendment 174.

3. FSAR, Section 14.3.

4. Standard Review Plan Section 6.2.4.

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.10:
"Weld Channel and Penetration Pressurization System"

PART 2:

CURRENT TECHNICAL SPECIFICATION PAGES

Annotated to show differences between CTS and ITS

CTS PAGE	AMENDMENT FOR REV O SUBMITTAL	AMENDMENT FOR REV 1 SUBMITTAL	COMMENT
3.3-1	NA	154	New *
3.3-8	NA	145	New *
3.3-18	NA	145	New *
4.4-3	NA	174	New *

* this section not previously submitted in Rev 0.

A.1

3.3 ENGINEERED SAFETY FEATURES

A.2

~~Applicability~~

~~Applies to the operating status of the Engineered Safety Features.~~

~~Objective~~

~~To define those limiting conditions for operating that are necessary: 1) to remove decay heat from the core in emergency or normal shutdown situations; 2) to remove heat from containment in normal operating and emergency situations; 3) to remove airborne iodine from the containment atmosphere following a Design Basis Accident; 4) to minimize containment leakage to the environment subsequent to a Design Basis Accident; 5) to minimize the potential for and consequences of Reactor Coolant System pressure transients.~~

Specification

The following specifications apply except during low temperature physics tests.

A. Safety Injection and Residual Heat Removal Systems

1. The reactor coolant system T_{avg} shall not exceed 200°F unless the following requirements are met:

   a. The refueling water storage tank water level shall be a minimum of 35.4 feet, with the water at a boron concentration ≥2400 ppm and ≤2600 ppm.

   b. One refueling water storage tank low level alarm operable and set to alarm between 10.5 feet and 12.5 feet of water in the tank.

SEE ITS 3.5.4

Amendment No. ~~67~~, ~~119~~, 154

Add Actions Note 1: Separate Condition Entry — L.1

Add Actions Note 2: Enter LCO 3.6.1 — A.6

A.3

Shall be Operable

LCO 3.6.10 D. Weld Channel and Penetration Pressurization System (WC & PPS)

1. The reactor shall not be brought above the cold shutdown condition unless: Mode 1, 2, 3, 4 — A.4

SR 3.6.10.1

a. All required portions of the four WC & PPS zones are pressurized above 43 psig.* Verify every 31 days — M.1, M.2

SR 3.6.10.2

b. The uncorrected air consumption for the WC & PPS is less than or equal to 0.2% of the containment volume per day. — M.7, A.10

2. The requirements of 3.3.D.1 may be modified as follows: — L.1

Req Action A.1 A.2

a. Any one of the four WC & PPS zones may be inoperable for a period not to exceed seven consecutive days. — M.3, L.1

Req. Action B.3

b. The uncorrected air consumption for the WC & PPS may not be in excess of 0.2% of the containment volume per day except for a period not to exceed seven consecutive days. If at any time it is determined that this limit is exceeded, repairs shall be initiated immediately. — A.8

3. If the WC & PP System is not restored to an operable status within the time period specified, then: — A.4

Req Act C.1, C.2

a. If the reactor is critical, it shall be brought to the hot shutdown condition utilizing normal operating procedures. The shutdown shall start no later than at the end of the specified time period. — 36 hours, M.6, A.5

b. If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values. — M.5

c. In either case, if the WC & PP System is not restored to an operable status within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period. — M.5, A.5, A.4, 36 hours, M.6

* Certain portions of the Weld Channel Pressurization System have become inoperable and are not practicably accessible for repair. These portions of the Weld Channel Pressurization System have been disconnected from the system and are no longer considered required portions of the four WC & PPS zones. — LA.1

Amendment No. ~~94~~, ~~98~~, 145

Add Condition A and associated Req Actions — M.3, L.1

Add Req. Actions B.1 and B.2 — M.4

Add Note to Req Act B.3

SR 3.0.2 is not applicable — A.9

C. Sensitive Leakage Rate

Verify the leakage rate for the Containment Penetration and Weld Channel Pressurization System is ≤ 0.2 percent of the containment free volume per day when pressurized to ≥ 43 psig and the containment pressure ~~is atmospheric~~. The testing shall be performed at intervals ~~no greater than~~ 3 years.

above — A.7

D. Air Lock Tests

SEE ITS 3.6.2

Perform required Containment Air Lock leak rate testing in accordance with the Containment Leakage Rate Testing Program.

Due to the distribution of the five fan cooler units and two containment spray pumps on the 480 volt buses, the closeness to which the combined equipment approaches minimum safeguards varies with which particular component is out of service. Accordingly, the allowable out of service periods vary according to which component is out of service. Under no conditions do the combined equipment degrade below minimum safeguards.

The seven day out of service period for the Weld Channel and Penetration Pressurization System and the Isolation Valve Seal Water System is consistent with W Standardized Technical Specifications. This is allowable because no credit has been taken for operation of these systems in the calculation of off-site accident doses should an accident occur. No other safeguards systems are dependent on operation of these systems.[11] The minimum pressure settings for the IVSWS and WC & PPS during operation assures effective performance of these systems for the maximum containment calculated peak accident pressure of 42.42 psig.[15] A WC & PPS zone is considered that portion of piping downstream of the air receiver discharge check valve up to the last component pressurized by that system portion.

Some portions of the Weld Channel Pressurization System (WCPS) piping would not be practicably accessible for repair if they became inoperable. A section of WCPS piping is considered to be inoperable if it brings the air consumption of the WC & PPS above the required 0.2% of the containment volume per day or if the section can not maintain a pressure above the required 43 psig. If it is determined, by written evaluation, that an inoperable section of piping is not practicably accessable for repair, then that portion of the WCPS may be disconnected from the system. Inoperable sections of WCPS piping which can be considered for disconnection will satisfy one of the following criteria: 1) the piping is covered by concrete and repairs of the piping would involve the removal of some portion of the containment structure; or 2) the piping is located behind plant equipment in the containment building and repairs of the piping would involve the relocation of the equipment. The integrity of the welds associated with any disconnected portions of the WCPS is verified by integrated leak rate testing. The provision that allows for the disconnection of portions of the WCPS piping does not apply to any other WC & PPS piping.

The Component Cooling System is not required during the injection phase of a loss-of-coolant accident. The component cooling pumps are located in the Primary Auxiliary Building and are accessible for repair after a loss-of-coolant accident.[6] During the recirculation phase following a loss-of-coolant accident, only one of the three component cooling pumps is required for minimum safeguards.[7]

A.1

Amendment No. ~~94~~, ~~98~~, ~~108~~, 145

Indian Point 3
Improved Technical Specifications (ITS)
Conversion Package

Technical Specification 3.6.10:
"Weld Channel and Penetration Pressurization System"

PART 3:

DISCUSSION OF CHANGES

Differences between CTS and ITS

DISCUSSION OF CHANGES
ITS SECTION 3.6.10 - Weld Channel and Penetration Pressurization System (WC&PPS)

ADMINISTRATIVE

A.1 In the conversion of the Indian Point Unit 3 Current Technical Specifications (CTS) to the plant specific Improved Technical Specifications (ITS) certain wording preferences or conventions are adopted which do not result in technical changes (either actual or interpretational). Additionally, editorial changes, reformatting, and revised numbering are adopted to make ITS consistent with the conventions in NUREG-1431, Standard Technical Specifications, Westinghouse Plants, Rev.1, i.e., the improved Standard Technical Specifications.

The CTS Bases are deleted and replaced with comprehensive ITS Bases designed to support interpretation and implementation of the associated Technical Specifications. The Bases explain, clarify, and document the reasons (i.e., bases) for the associated Technical Specifications, and reflect the IP3 plant specific design, analyses, and licensing basis. In accordance with 10 CFR 50.36(a), the ITS Bases are included with the proposed ITS conversion application; however, deletion of the CTS Bases and the adoption of the ITS Bases is an administrative change with no impact on safety.

A.2 CTS Limiting Conditions for Operation (LCOs) and Surveillance Requirements (SRs) include statements of the objective and the applicability. The CTS statements of objective and applicability are deleted because these statements do not establish any requirements and do not provide any guidance for the application of CTS requirements. Therefore, deletion of these statements has no significant adverse impact on safety.

A.3 CTS 3.3.D.1 requires that all required portions of the four WC&PPS zones are pressurized above 43 psig and that uncorrected air consumption for the WC&PPS is less than or equal to 0.2% of the containment volume per day. ITS LCO 3.6.10 requires that WC&PPS is Operable (i.e., capable of performing its specified safety function(s)). In conjunction with this change, ITS SR 3.6.10.1 (See DOC M.1) is added to require periodic verification that all required portions of the four WC&PPS zones are pressurized above 43 psig and ITS SR 3.6.10.2 is added (See DOC M.2) to

require periodic verification that uncorrected air consumption for the WC&PPS is less than or equal to 0.2% of the containment volume per day. This is an administrative change with no impact on safety because ITS SR 3.0.1 requires that ITS SR 3.6.10.1 and ITS SR 3.6.10.2 are met at all times in the applicable modes. Therefore, there is no change to the existing requirements.

A.4 CTS 3.3.D.1 establishes the Applicability for the WC&PPS as whenever the reactor is above cold shutdown. ITS 3.6.10 maintains this Applicability by requiring that WC&PPS is Operable in Modes 1, 2, 3 and 4 (i.e. whenever the reactor is above cold shutdown). In conjunction with this change, ITS 3.6.10 substitutes the term Mode 3 for the hot shutdown condition and Mode 5 for cold shutdown condition. These are administrative changes with no impact on safety because these changes are consistent with the ITS 1.0 definitions for Modes 1, 2, 3 and 4. Specifically, Modes 1, 2, 3 and 4 is identical to all conditions above cold shutdown with the ITS Mode 3 corresponding to CTS hot shutdown and the ITS Mode 5 corresponding to CTS cold shutdown. Therefore, this is an administrative change with no impact on safety because the change in presentation does not result in a change to any requirement.

A.5 CTS 3.3.D.3.a specifies that if the WC&PPS is not restored to Operable within completion time specified in 3.3.D.2, then the reactor shall be brought to hot shutdown (i.e., Mode 3) utilizing normal operating procedures and that the shutdown shall start no later than the end of the specified period (i.e., the time allowed to restore WC&PPS to Operable). CTS 3.3.D.3.c specifies that the "The shutdown shall start no later than the end of the 48 hour period." The statements that "the shutdown shall start no later than the end of the specified period"and "The shutdown shall start no later than the end of the 48 hour period" are deleted because the requirement is established by ITS 1.3, Completion Times, which specifies completion time clocks always start as soon as applicable requirements are not met. This is an administrative change with no impact on safety because the statements being deleted are maintained by ITS 1.3, Completion Times.

DISCUSSION OF CHANGES
ITS SECTION 3.6.10 - Weld Channel and Penetration Pressurization System (WC&PPS)

A.6 ITS 3.6.10 adds a new Note 2 that directs entry into the applicable Conditions and Required Actions of LCO 3.6.1 if it is determined that WC&PPS inoperability is indicative of or results in exceeding the overall containment leakage rate. This note is needed because of the following: ITS LCO 3.6.10 Actions may not restore safety function if the overall containment leakage rate is being exceeded; and, ITS LCO 3.0.6 specifies that it is not necessary to enter into the supported systems' Conditions and Required Actions (i.e., LCO 3.6.1, Containment) unless directed to do so by the support system's Required Actions (i.e., LCO 3.6.10, WC&PPS). Therefore, Note 2 is needed to provide an exception to ITS LCO 3.0.6 and will ensure that the applicable Conditions and Required Actions of LCO 3.6.1 are applied if the overall containment leakage rate is being exceeded. This note is not needed in CTS because CTS does not have a requirement equivalent to ITS LCO 3.0.6 and the requirements equivalent to ITS LCO 3.6.1 are applicable even if the actions are being taken for an inoperable WC&PPS. Therefore, this is an administrative change with no impact on safety because the change does not result in a change to any existing requirements.

A.7 CTS specifies that the WC&PPS leakage rate be verified to be within required limits when pressurized to ≥ 43 psig and the containment pressure is atmospheric. ITS SR 3.6.10.3 maintains the same requirement except that the minimum pressure differential is expressed as pressurized to ≥ 43 psi above containment pressure. This change is needed to clarify that small variations in containment pressure during the performance of this test do not invalidate test results as long as WC&PPS pressure is maintained ≥ 43 psi above containment pressure. This is an administrative change with no impact on safety because it provides a clarification of the existing requirement that is a reasonable interpretation of the existing requirement.

A.8 CTS 3.3.D.1.a requires that all required portions of each of the WC&PPS zones are pressurized to a specified limit; and, CTS 3.3.D.1.b limits WC&PPS total leakage (i.e., the combined leakage from each of the individual components supported by all four WC&PPS zones) to a specified limit. In conjunction with these requirements, CTS 3.3.D.2.a specifies that only one of the four WC&PPS zones may be inoperable at any one time establishes an allowable out of service time (AOT) for the inoperable

zone; and, CTS 3.3.D.2.b establishes an AOT if WC&PPS total leakage exceeds specified limits. As a result, the CTS 3.3.D.2.a requirements for an inoperable zone are actually requirements for a WC&PPS zone with one or more of the individual components supported by WC&PPS not at the specified minimum pressure. Therefore, ITS 3.6.10, Condition A, establishes requirements for components supplied by WC&PPS not within the specified pressure limits versus maintaining the CTS specification for an inoperable WC&PPS zone. This more precise description of WC&PPS inoperability is needed because ITS 3.6.10 establishes specific compensatory actions to promptly restore safety function for depressurization and/or high leakage; whereas, CTS provides no compensatory action for inoperable WC&PPS (i.e., depressurization or excessive leakage) and uses the same AOT for both depressurization or excessive leakage. This is a administrative change with no impact on safety because no technical change results from the clarification that the CTS term WC&PPS inoperable refers to a WC&PPS zone with one or more of the individual components supported by WC&PPS not at the specified minimum pressure. Therefore, this change has no adverse impact on safety.

A.9 CTS 4.4.C specifies that requires a sensitive leak rate test of the WC&PPS at intervals no greater than 3 years. The phrase "at intervals no greater than" indicates that the SR Frequency extension allowance (25% of the SR interval) provided in CTS 1.12 is not applicable. ITS SR 3.6.10.3 maintains the requirement for a sensitive leak rate test of the WC&PPS at a Frequency of 36 months. The ITS SR 3.6.10.3 Frequency is modified by a Note indicating that SR 3.0.2 (i.e., 25% extension to the SR interval) is not applicable. This note maintains the restriction imposed by the wording of CTS 4.4.C. This is an administrative change with no impact on safety because there is no change to the existing requirement.

A.10 CTS 3.3.D.1.b requires that the uncorrected air consumption for the WC&PPS is less than or equal to 0.2% of the containment volume per day. ITS LCO 3.6.10 maintains the requirement except that the limit is based on containment free volume versus containment volume. This change is an editorial clarification that makes the wording of the SR requirement match CTS 4.4.C and the WC&PPS design requirement as described in FSAR 6.6. This is an administrative change with no impact on safety because there is no change to the existing requirement.

DISCUSSION OF CHANGES
ITS SECTION 3.6.10 - Weld Channel and Penetration Pressurization System (WC&PPS)

MORE RESTRICTIVE

M.1 CTS 3.3.D.1.a requires that all required portions of the four WC&PPS zones are pressurized above 43 psig; however, there is no requirement for periodic verification that these requirements are met. ITS LCO 3.6.10 maintains the requirement to keep WC&PPS Operable (See DOC A.3): however, ITS SR 3.6.10.1 is added to require verification every 31 days that this requirement is met. This change is needed to ensure formal periodic verification that the requirement is met. The 31 day Frequency is acceptable because low pressure alarms in the Control Room to ensure that operators are aware at all times that all WC&PPS zones are pressurized. A new requirement for periodic verification of an existing requirement has no adverse impact on safety.

M.2 CTS 3.3.D.1.b requires that the uncorrected air consumption (See DOC M.7) for the WC&PPS is less than or equal to 0.2% of the containment volume per day; however, there is no requirement for periodic verification that these requirements are met. ITS LCO 3.6.10 maintains the requirement to keep WC&PPS Operable (See DOC A.3): however, ITS SR 3.6.10.2 is added to require verification every 31 days that this requirement is met. This change is needed to ensure formal periodic verification that the requirement is met. The 31 day Frequency is acceptable because WC&PPS air consumption indication is continuously available in the control room and alarmed. A new requirement for periodic verification of an existing requirement has no adverse impact on safety.

M.3 CTS 3.3.D.2.a specifies that an inoperable (i.e., depressurized (see DOC A.8)) WC&PPS zone must be restored to Operable (See DOC L.1) within 7 days. If the WC&PPS safety function is not restored within these 7 days, the reactor must be promptly placed in cold shutdown. Under the same conditions (i.e., WC&PPS depressurized), ITS LCO 3.6.10, Required Actions A.1 and A.2, requires that depressurized portions of WC&PPS are isolated within 4 hours with periodic verification that isolation is maintained. This change is more restrictive because it restores safety function within 4 hours versus the 7 allowed in CTS.

The WC&PPS supply isolation valves are normally open valves. As stated in Safety Evaluation Report for IP3 Amendment 174, operating with these valves normally open and the exemption from type C testing in ITS Specification 5.15 is acceptable because: (1) the WC&PPS is monitored for changes to the system leakage rate; (2) the WC&PPS leakage rate is quantified during every 36 months; and, (3) WC&PPS pressure is maintained higher than the containment peak accident pressure (Ref. 2). Therefore, if the required pressure is not maintained or excessive WC&PPS leakage is identified, then compensatory actions are required to ensure the containment boundary is maintained.

Isolation of depressurized portions of WC&PPS restores safety function because:

a. For containment isolation valves (CIVs) supported by WC&PPS, WC&PPS pressurization is applied to the space between those CIVs that are normally closed. CIVs supported by WC&PPS are Type C tested in accordance with Specification 5.5.15 because WC&PPS is not credited as a seal system. For loss of WC&PPS pressurization, isolation of the WC&PPS supply to the affected CIVs provides appropriate compensatory action because the supported CIVs are a tested boundary and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path.

b. For the containment air lock seals supported by WC&PPS, WC&PPS pressurization is normally applied to the space between the double gaskets on each of the airlock seals. Air lock operability does not require pressurization of the air lock seals except as needed to verify the seals have reseated after each air lock door is operated (see LCO 3.6.2, "Containment Air Locks"). For loss of WC&PPS pressurization, isolation of the WC&PPS supply to the affected air lock seals provides appropriate compensatory action because pressurization is not required for air lock operability (except as needed to verify the seals have reseated after each air lock door is operated) and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path.

c. For weld channels and piping penetrations supported by WC&PPS, WC&PPS pressurizes what is equivalent to a closed system inside containment. Because it is reasonable to assume that WC&PPS

leakage is not the result of a containment weld or piping penetration, WC&PPS leakage and/or lack of pressurization is a concern only because it presents a potential leakage path from containment to the atmosphere via the depressurized WC&PPS. Therefore, isolation of the WC&PPS supply to the affected section of weld channel or piping penetration provides appropriate compensatory action for both loss of pressurization and air consumption caused by flow from the WC&PPS into containment. This assumes that containment leakage rate testing required by Specification 5.15 provides a high degree of assurance that WC&PPS air consumption is not indicative of deterioration of the containment boundary.

As described above, a depressurized sections of WC&PPS presents a loss of safety function identical to loss of one redundant automatic containment isolation valve. Therefore, isolation of the WC&PPS supply to the affected components with periodic verification that isolation is maintained restores safety function using exactly the same technique used for an inoperable redundant automatic containment isolation valve. This change is acceptable because, although WC&PPS does provide an additional means for ensuring that containment leakage is minimized, no credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations for 10 CFR 100 and GDC 17 requirements. This is true because the integrated leakage rate tests are performed with the double penetration and weld channel zones open to the containment atmosphere.

M.4 CTS 3.3.D.2.b specifies that WC&PPS leakage in excess of specified limits must be restored to within 7 days. If the WC&PPS leakage rate is not restored within these 7 days, the reactor must be promptly placed in cold shutdown. ITS 3.6.10, Required Action B.3, maintains the requirement that WC&PPS leakage in excess of specified limits must be restored to within 7 days; however, restoring leakage to within specified limits may not restore required safety function. Therefore, a Note was added to Required Action B.3 and Required Actions B.1 and B.2 were added. These changes are needed because of the following:

a. Required Action B.3 requires that portions of the WC&PPS are isolated, as necessary, to restore WC&PPS leakage to within the

limits of SR 3.6.10.2. This will result in one or more of the individual components supported by WC&PPS not at the specified minimum pressure. Therefore, as explained in DOC M.3, safety function is not restored until any portions of the WC&PPS that are depressurized by this Action are isolated. Therefore, Required Action B.3, is modified by a Note that requires entry into Condition A for components not within the pressure limit of SR 3.6.10.1 as a result of isolating the leakage path. The Completion Time of 7 days to isolate the leakage path is acceptable because all un-isolated portions of the WC&PPS are pressurized, otherwise, Condition A is applicable immediately. Safety function is restored when leaking portions of the WC&PPS are isolated and at least one isolation device separates the containment barrier from the WC&PPS leakage path.

b. For containment isolation valves (CIVs) supported by WC&PPS, WC&PPS pressurization is applied to the space between those CIVs that are normally closed. CIVs supported by WC&PPS are Type C tested in accordance with Specification 5.5.15 because WC&PPS is not credited as a seal system. For high WC&PPS air consumption, a consideration is that the leakage may indicate that a supported CIV is exceeding its leakage rate acceptance criteria. If the leakage path is isolated from the supported CIVs when the WC&PPS supply to the CIV is isolated, isolation of the WC&PPS supply to the CIV restores the required safety function. If the leakage path is not isolated from the supported CIV when the WC&PPS supply to the CIV is isolated (i.e., the CIV is depressurized), the supported CIV may be inoperable and the requirements of LCO 3.6.3, "Containment Isolation Valves," are applicable. Entry into LCO 3.6.3 is required within 1 hour of discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported containment isolation valves. The Required Actions of LCO 3.6.3 will restore safety function for WC&PPS air consumption leakage path that is depressurized.

c. For the containment air lock seals supported by WC&PPS, WC&PPS pressurization is normally applied to the space between the double gaskets on each of the airlock seals. For high WC&PPS air consumption, a consideration is that the leakage may indicate that a supported air lock seal is exceeding its leakage rate

acceptance criteria. If the leakage path is isolated from the supported air lock when the WC&PPS supply to the air lock is isolated, isolation of the WC&PPS supply to the air lock restores the required safety function. If the leakage path is not isolated from the supported air lock seal when the WC&PPS supply to the air lock seal is isolated, the supported air lock may be inoperable and the requirements of LCO 3.6.2, "Containment Air Locks," are applicable. Entry into LCO 3.6.32 is required within 1 hour of discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported containment air lock seals. The Required Actions of LCO 3.6.2 will restore safety function for WC&PPS air consumption leakage path that is depressurized.

d. For weld channels and piping penetrations supported by WC&PPS, WC&PPS pressurizes what is equivalent to a closed system inside containment. Because it is reasonable to assume that WC&PPS leakage is not the result of a containment weld or piping penetration, WC&PPS leakage and/or lack of pressurization is a concern only because it presents a potential leakage path from containment to the atmosphere via the depressurized WC&PPS. Therefore, isolation of the WC&PPS supply to the affected section of weld channel or piping penetration provides appropriate compensatory action for both loss of pressurization and air consumption caused by flow from the WC&PPS into containment. This assumes that containment leakage rate testing required by Specification 5.15 provides a high degree of assurance that WC&PPS air consumption is not indicative of deterioration of the containment boundary.

As described above, ITS 3.6.10, Required Action B.3, maintains the CTS requirement to restore WC&PPS leakage to within limits within 7 days as long as pressurization of the supported component is maintained. Safety function is maintained by pressurization of the potential leakage path and the ability to maintain this pressurization following an event using available air compressors or isolating each WC&PPS zone for which pressure cannot be maintained. Likewise, ITS 3.6.10, Required Actions B.1 and B.2, ensure that the appropriate actions are taken if insolation of the WC&PPS supply to supported components is not sufficient to restore safety function.

This change is acceptable because, although WC&PPS does provide an additional means for ensuring that containment leakage is minimized, no credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations for 10 CFR 100 and GDC 17 requirements. This is true because the integrated leakage rate tests are performed with the double penetration and weld channel zones open to the containment atmosphere.

M.5 CTS 3.3.D.3.a requires that the reactor is promptly placed in Mode 3 if WC&PPS cannot be restored to Operable status within the required AOTs. However, CTS 3.3.D.3.b and CTS 3.3.D.3.c allow the reactor to remain in hot shutdown (i.e., Mode 3) for 48 hours before reactor cooldown is initiated if the reactor coolant system temperature and pressure are not increased more than 25°F and 100 psi, respectively, over existing values. ITS 3.6.10, Required Action C.1 maintains this requirement to promptly place the reactor in Mode 3 (See DOC M.6); however, Required Action C.2, requires that the reactor be promptly placed outside the applicable mode (i.e. be in Mode 5 within 36 hours). In conjunction with this change, the CTS 3.3.D.3.b to maintain stable temperature and pressure is eliminated. This change is needed because WC&PPS supports containment Operability and when requirements are not met, the reactor should be promptly placed outside the applicable mode. Therefore, this change has no adverse impact on safety.

M.6 CTS 3.3.D.3 specifies that, if the WC&PPS is not restored to Operable within a specified completion time, then the reactor shall be brought to hot shutdown (i.e., Mode 3) utilizing normal operating procedures and then (See DOC M.5) cold shutdown (i.e., Mode 5) utilizing normal operating procedures. Under the same conditions, ITS LCO 3.6.10, Required Actions C.1 and C.2, specifies that the reactor be in Mode 3 in 6 hours and Mode 5 in 36 hours. Although 6 hours is reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging plant systems, the ITS Completion time of 6 hours to reach Mode 3 and 36 hours to reach Mode 5 is more restrictive than the requirement to utilize normal operating procedures because the CTS completion time could vary based on initial plant conditions. This change is acceptable because it is an explicit statement of a reasonable interpretation of the existing

requirement.

M.7 CTS 3.3.D.1.b requires that the "uncorrected" air consumption for the WC&PPS is less than or equal to 0.2% of the containment volume per day. ITS SR 3.6.10.2 maintains this requirement (See DOC M.2) except that the term "uncorrected" is deleted from the ITS SR. This change is needed because CTS 3.3.D.1.b was established before the installed IP3 instrumentation was capable of measuring WC&PPS air consumption in standard cubic feet per minute (scfm)(i.e., corrected for temperature and pressure). Therefore, the SR is revised to recognize that improved plant instrumentation allows establishing acceptance criteria that more accurately reflects the WC&PPS analysis assumptions. The ITS SR 3.6.10.2 Bases includes the supporting information that a WC&PPS flow rate of 14.2 scfm, if sustained for 24 hours, is calculated to be equivalent to 0.2% of the containment free volume at a pressure of 43 psig. This is a more restrictive change because ITS SR 3.6.10.2 no longer allows the use of "uncorrected" air consumption when determining that WC&PPS leakage is less than or equal to 0.2% of the containment volume per day. This more restrictive change has no adverse impact on safety.

LESS RESTRICTIVE

L.1 CTS 3.3.D.2.a establishes the limit that only one of the four WC&PPS zones may be inoperable (i.e., depressurized) at any one time for a period not to exceed seven consecutive days. CTS 3.3.D.3 requires that the reactor is promptly placed in cold shutdown if all aspects of WC&PPS operability are not restored within the AOT. ITS 3.6.10, Actions Note 1, specifies that separate Condition entry is allowed for each component supplied by WC&PPS. Additionally, ITS 3.6.10, Condition A, specifies compensatory action for one or more components supplied by WC&PPS not within the pressure limit. This is acceptable because the Required Actions for Conditions A and B provide appropriate compensatory actions for each component supported by WC&PPS as described and justified in DOCs M.3 and M.4. Complying with the Required Actions allows for continued operation because these Actions ensure that safety function is promptly restored, and subsequent inoperable WC&PPS zones are governed by subsequent Condition entry and application of associated Required

Actions.

This change is acceptable because, although WC&PPS does provide an additional means for ensuring that containment leakage is minimized, no credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations for 10 CFR 100 and GDC 17 requirements. This is true because the integrated leakage rate tests are performed with the double penetration and weld channel zones open to the containment atmosphere.

REMOVED DETAIL

LA.1 CTS 3.3.D.1 requires that all "required" portions of the four WC&PPS zones are pressurized above 43 psig. A footnote to CTS 3.3.D.1 specifies that certain portions of the WC&PPS have become inoperable and are not practicably accessible for repair. These portions of the WC&PPS have been disconnected from the system and are no longer considered required portions of the four WC&PPS zones. CTS Bases establish criteria for determining when a section of WC&PPS can be declared no longer required.

ITS SR 3.6.10.1 maintains the requirement that only "required" portions of WC&PPS are required to be pressurized; however, the footnote to CTS 3.3.D.1 and the CTS Bases used to establish criteria for determining when a section of WC&PPS can be declared no longer required is relocated to the LCO section of the LCO 3.6.10 Bases.

This change is acceptable because ITS 3.6.10 still requires that WC&PPS is Operable and, similar to the CTS, the ITS Bases still requires that if a portion of the WC&PPS is to be considered not required, it must meet all of the following criteria: 1) it must be inoperable (i.e., can not maintain a pressure above required limits and/or cause system air consumption to exceed required limits); 2) it must be isolated or disconnected from the system; and, 3) it must have been determined by written evaluation as not practicably accessible for repair. Additionally, the Technical Specification Bases are subject to change control in accordance with ITS 5.5.12, Bases Control Program. This approach provides an effective level of regulatory control and provides for a more appropriate change control process. This change is a less

restrictive administrative change with no impact on safety.

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PART 4:

No Significant Hazards Considerations
for
Changes between CTS and ITS
that are
Less Restrictive

No Significant Hazard Considerations for Changes that are Administrative, More Restrictive, and Removed Details are the same for all Packages. A Copy is included at the end of the Package.

NO SIGNIFICANT HAZARDS EVALUATION
ITS SECTION 3.6.10 - Weld Channel and Penetration Pressurization System (WC&PPS)

LESS RESTRICTIVE
("L.1" Labeled Comments/Discussions)

New York Power Authority has evaluated the proposed Technical Specification change identified as "Less Restrictive" in accordance with the criteria set forth in 10 CFR 50.92, and has determined that the proposed change does not involve a significant hazards consideration. The bases for the determination that the proposed change does not involve a significant hazards consideration are discussed below.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

   This change eliminates the requirement for plant shutdown if WC&PPS is no restored to Operable within 7 days; allows more than one WC&PPS zone to be inoperable at one time; and allow separate condition entry for each component supported by WC&PPS.

   This change will not result in a significant increase in the probability of an accident previously evaluated because WC&PPS Operability is not a precursor to any analyzed event. This change will not result in a significant increase in the consequence of an accident previously evaluated because new Required Actions for Conditions A and B (described and justified in DOCs M.3 and M.4) provide prompt and appropriate compensatory actions that restores WC&PPS safety for each component supported by WC&PPS. These additional actions are adequate to restore safety function because of the following:

   1. ITS LCO 3.6.10, Required Actions A.1 and A.2, requires that depressurized portions of WC&PPS are isolated within 4 hours with periodic verification that isolation is maintained. This change is more restrictive because it restores safety function within 4 hours versus the 7 allowed in CTS.

Isolation of depressurized portions of WC&PPS restores safety function because:

a. For containment isolation valves (CIVs) supported by WC&PPS, isolation of the WC&PPS supply to the affected CIVs restores required safety function because the supported CIVs are a tested boundary and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path.

b. For the containment air lock seals supported by WC&PPS, isolation of the WC&PPS supply to the affected air lock seal restores required safety function because pressurization is not required for air lock operability (except as needed to verify the seals have reseated after each air lock door is operated) and isolating the depressurized WC&PPS supply eliminates WC&PPS as a potential leakage path.

c. For weld channels and piping penetrations supported by WC&PPS, WC&PPS pressurizes what is equivalent to a closed system inside containment. Therefore, isolation of the WC&PPS supply to the affected section of weld channel or piping penetration provides appropriate compensatory action for both loss of pressurization and air consumption caused by flow from the WC&PPS into containment.

2. ITS 3.6.10, Required Action B.3, maintains the CTS requirement that WC&PPS leakage in excess of specified limits must be restored to within 7 days; however, restoring leakage to within specified limits may not restore required safety function. Therefore, a Note was added to Required Action B.3 and Required Actions B.1 and B.2 were added. These changes are adequate to restore required safety function because of the following:

a. Required Action B.3 requires that portions of the WC&PPS are isolated, as necessary, to restore WC&PPS leakage to within the limits. Required Action B.3, is modified by a Note that requires entry into Condition A for components not

within the pressure limit. The Completion Time of 7 days to isolate the leakage path is acceptable because all un-isolated portions of the WC&PPS are pressurized, otherwise, Condition A is applicable immediately. Safety function is restored when leaking portions of the WC&PPS are isolated and at least one isolation device separates the containment barrier from the WC&PPS leakage path.

b. For containment isolation valves (CIVs) supported by WC&PPS, isolation of the WC&PPS supply to the CIV restores the required safety function if the leakage path is isolated from the supported CIVs when the WC&PPS supply to the CIV is isolated. If the leakage path is not isolated from the supported CIV when the WC&PPS supply to the CIV is isolated, the supported CIV may be inoperable and the requirements of LCO 3.6.3, "Containment Isolation Valves," are applicable.

c. For the containment air lock seals supported by WC&PPS, isolation of the WC&PPS supply to the air lock restores the required safety function if the leakage path is isolated from the supported air lock when the WC&PPS supply to the air lock is isolated. If the leakage path is not isolated from the supported air lock seal when the WC&PPS supply to the air lock seal is isolated, the supported air lock may be inoperable and the requirements of LCO 3.6.2, "Containment Air Locks," are applicable.

d. For weld channels and piping penetrations supported by WC&PPS, isolation of the WC&PPS supply to the affected section of weld channel or piping penetration provides appropriate compensatory action for both loss of pressurization and air consumption caused by flow from the WC&PPS into containment. This assumes that containment leakage rate testing required by Specification 5.15 provides a high degree of assurance that WC&PPS air consumption is not indicative of deterioration of the containment boundary.

As described above, a depressurized sections of WC&PPS presents a loss of safety function identical to loss of one redundant automatic containment isolation valve. Therefore, isolation of the WC&PPS supply to the affected components with periodic verification that isolation is maintained restores safety function using exactly the same technique used for an inoperable redundant automatic containment isolation valve. This change is acceptable because, although WC&PPS does provide an additional means for ensuring that containment leakage is minimized, no credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations for 10 CFR 100 and GDC 17 requirements. This is true because the integrated leakage rate tests are performed with the double penetration and weld channel zones open to the containment atmosphere.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

   The proposed change will not involve any physical changes to systems, structures, or components, or involve a change in normal plant operation. Therefore, it will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Does this change involve a significant reduction in a margin of safety?

   This change does not involve a significant reduction in margin of safety because, although WC&PPS does provide an additional means for ensuring that containment leakage is minimized, no credit is taken for the WC&PPS when determining the amount of radioactivity released for offsite dose evaluations for 10 CFR 100 and GDC 17 requirements. This is true because the integrated leakage rate tests are performed with the double penetration and weld channel zones open to the containment atmosphere.

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PART 5:

NUREG-1431
Annotated to show differences between
NUREG-1431 and ITS

Status of NUREG 1431 Generic Changes for ITS 3.6.10

This ITS Specification is based on NUREG-1431 Specification No. **IP3 UNIQUE 1xx**
as modified by the following Generic Changes:

3.6 CONTAINMENT SYSTEMS

3.6.10 Weld Channel and Penetration Pressurization System (WC&PPS)

<3.3 D>
<DOC A.3>

LCO 3.6.10 Weld Channel and Penetration Pressurization System shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

----------NOTES----------

<DOC L.1> 1. Separate Condition entry is allowed for each component supplied by WC&PPS.

<DOC A.6> 2. Enter applicable Conditions and Required Actions of LCO 3.6.1, "Containment," when the overall containment leakage rate acceptance criteria is exceeded.

<3.3.2.A>
<DOC M.3>
<DOC L.2>
<DOC A.8>

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more components supplied by WC&PPS not within the pressure limit of SR 3.6.10.1.	A.1 Isolate the WC&PPS supply to the affected components by use of at least one closed and de-activated automatic valve, closed manual valve, blind flange, or check valve with flow through the valve secured. **AND**	4 hours (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 --------NOTE--------- Isolation devices in high radiation areas may be verified by use of administrative means. ----------	
	Verify the WC&PPS supply to the affected component is isolated.	Once per 31 days for isolation devices outside containment not locked, sealed or otherwise secured AND Prior to entering MODE 4 from MODE 5 if not performed within the previous 92 days for isolation devices inside containment
⟨3.3.2.B⟩ ⟨DOC M.4⟩ B. WC&PPS air consumption not within the limits of SR 3.6.10.2.	B.1 Enter applicable Conditions and Required Actions of LCO 3.6.3, "Containment Isolation Valves." AND	1 hour from discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported containment isolation valves (continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
B. (continued)			
<3.3.2.b> <DOC M.4>	B.2	Enter applicable Conditions and Required Actions of LCO 3.6.2, "Containment Air Locks."	1 hour from discovery that the WC&PPS air consumption leakage path is depressurized and not isolated from the supported air lock
	AND		
<DOC M.3> <DOC L.2>	B.3	--------NOTE-------- Enter condition A for components not within the pressure limit of SR 3.6.10.1. ----------	
<3.3.2.b>		Isolate portions of WC&PPS to restore air consumption to within limits of SR 3.6.10.2.	7 days
<3.3.D.3> <DOC M.5> <DOC M.6> <DOC A.4> <DOC A.5>	C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
		AND	
		C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.6.10.1 (3.3.D.1.a) (DOC M1)	Verify all required portions of each WC& PPS zone is pressurized to ≥ 43 psig.	31 days
SR 3.6.10.2 (3.3.D.1.b) (DOC M.2)	Verify the WC&PPS air consumption is ≤ 0.2% of the containment free volume per day.	31 days
SR 3.6.10.3 (44.c) (DOC A.2) (DOC A9)	Verify the leakage rate for the WC&PPS is ≤ 0.2% of the containment free volume per day when pressurized to ≥ 43 psi above containment pressure.	-----NOTE------ SR 3.0.2 is not applicable ---------- 36 months

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PART 6:

Justification of Differences between

NUREG-1431 and IP3 ITS

JUSTIFICATION OF DIFFERENCES FROM NUREG-1431
ITS SECTION 3.6.9 - Weld Channel and Penetration Pressurization System (WC&PPS)

This ITS Specification is unique to IP3. Therefore, there is no markup of NUREG-1431.

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Relocated Item No: **R.4**

MAXIMUM REACTOR COOLANT OXYGEN, CHLORIDE AND FLUORIDE CONCENTRATION

PART 2:

Justification for Relocation of CTS Requirement to Licensee Controlled Document

Justification for Relocation of CTS Requirement to
Licensee Controlled Document
Relocated Item R.4: MAXIMUM RCS OXYGEN, CHLORIDE AND FLUORIDE CONCENTRATION

CTS 3.1.E

Concentrations of contaminants in the reactor shall not exceed the following limits when the reactor coolant is above 250°F:

Contaminant	Normal Steady-State Operation (PPM)	Transient Not To Exceed 24 Hours (PPM)
a. Oxygen	0.10	1.00
b. Chloride	0.15	1.50
c. Fluoride	0.15	1.50

CTS Table 4.1-2 (Sheet 1 of 2), Item 5

FREQUENCIES FOR SAMPLING TESTS			
Sample	Analysis	Frequency	Maximum Time Between Analysis
5. Refueling Water Storage Tank	Chlorides	Monthly	45 days

Discussion:

Poor coolant water chemistry contributes to the long term degradation of system materials of construction and thus is not of immediate importance to the plant operator. Reactor coolant System (RCS) and Refueling Water Storage Tank (RWST) water chemistry is monitored for a variety of reasons. One reason is to reduce the possibility of failures in the RCS pressure boundary caused by corrosion. RWST water chemistry is monitored because it provides makeup water to the RCS and can be a source of contaminants. However, the chemistry monitoring activity is of a long term preventative purpose rather than mitigative.

Justification for Relocation of CTS Requirement to
Licensee Controlled Document

Relocated Item R.4: MAXIMUM RCS OXYGEN, CHLORIDE AND FLUORIDE CONCENTRATION

The effects of contaminants in the reactor coolant are time and temperature dependent. It is consistent, therefore, to permit a transient concentration to exist for some period of time and still provide the assurance that the integrity of the primary coolant system will be maintained. Additionally, if these limits are exceeded, measures can be taken to correct the condition, e.g., replacement of ion exchange resin or adjustment of the hydrogen concentration in the volume control tank during power operation. Because of the time dependent nature of any adverse effects arising from oxygen, chloride, and fluoride concentration in excess of the limits, it is unnecessary to shut down immediately.

Comparison to Selection Criteria:

1. RCS and RWST water chemistry are not installed instrumentation used for, or capable of, detecting and indicating in the control room a significant abnormal degradation of the reactor coolant pressure boundary.

2. RCS and RWST water chemistry are not process variables, design feature, or operating restriction that is an initial condition of a FSAR accident analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

3. RCS and RWST water chemistry are not structures, systems, or components that are part of the primary success path and functions or actuate in the mitigation of a FSAR accident analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

4. As discussed in WCAP-11618, RCS water chemistry and RWST chloride concentration were found to be a non-significant risk contributor to core damage frequency and offsite releases. NYPA has reviewed this evaluation and considers it applicable to IP3. Effects of RCS chemistry are outside the scope of the IP3 IPE, and therefore, the plant-specific IPE provides no information to supplement the conclusions from the generic analysis.

Justification for Relocation of CTS Requirement to
Licensee Controlled Document

Relocated Item R.4: MAXIMUM RCS OXYGEN, CHLORIDE AND FLUORIDE CONCENTRATION

Conclusion:

Since the selection criteria have not been satisfied, the RCS Chemistry LCO and Surveillances will be relocated to the Technical Requirements Manual (TRM) and will be implemented by administrative programs and plant procedures.

This change is acceptable because the TRM and plant procedures will maintain the limits for Oxygen, chloride and fluoride in the reactor coolant system. Therefore, there is no change to the existing requirements and no change to the level of safety of facility operation.

The Quality Assurance Plan will be revised to specify that requirements in the TRM are part of the facility as described in the FSAR and that changes to the TRM can be made only in accordance with the requirements of 10 CFR 50.59. Therefore, this change is acceptable because there is no change to the existing requirements by the relocation of requirements to the TRM and future changes to the TRM will be controlled in accordance with 10 CFR 50.59.

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Relocated Item No: **R.8**

AREA RADIATION MONITORING and PLANT EFFLUENT RADIOIODINE/PARTICULATE SAMPLING; Plant Wide Range Vent Monitor

PART 2:

Justification for Relocation of CTS Requirement to Licensee Controlled Document

Justification for Relocation of CTS Requirement to
Licensee Controlled Document

Relocated Item R.8: AREA RADIATION MONITORING and PLANT EFFLUENT RADIOIODINE/PARTICULATE SAMPLING

CTS 3.8.A.3, Area Raditiation Monitoring during fuel handling;
CTS 3.8.C.1, Area Raditiation Monitoring during fuel handling;
CTS Table 3.5-4, Items 5 and 7 and note 3;
CTS Table 4.1-1, Items 15.d and 34.

Discussion:

All gaseous and particulate effluent from accident releases of radioactivity external to the reactor containment (e.g., the spent fuel pit and waste handling equipment) will be exhausted from the plant vent. Various Air particulate monitors are provided to detect air particulate gamma radioactivity discharges through the plant vent to the atmosphere. The purpose of the Radioactive Gaseous Effluent Instrumentation is to monitor and control radioactive releases. This instrumentation provides a surveillance of release points and initiates automatic alarm/trip functions to terminate the release prior to exceeding the limits of 10 CFR 20. The alarm/trip functions are set in accordance with the ODCM.

Requirements to monitor the containment and spent fuel storage areas using either installed or portable instrumentation is not assumed in the analysis of any event.

Comparison to Selection Criteria:

1. Radioactive gaseous effluent instrumentation and area radiation monitors are not installed instrumentation used for, or capable of, detecting and indicating in the control room a significant abnormal degradation of the reactor coolant pressure boundary.

2. Radioactive gaseous effluent instrumentation and area radiation monitors are not a process variables, design feature, or operating restrictions that is an initial condition of a FSAR accident analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

3. Radioactive gaseous effluent instrumentation and area radiation monitors

are not structures, systems, or components that are part of the primary success path and functions or actuates in the mitigation of a FSAR accident analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier.

4. As discussed in Section 4.0 (Appendix A, page A-69) and summarized in Table 1 of WCAP-11618, radioactive gaseous effluent instrumentation and area radiation monitors are non-significant risk contributors to core damage frequency and offsite releases. NYPA has reviewed this evaluation and considers it applicable to IP3. Effects of radioactive gaseous effluent instrumentation are outside the scope of the IP3 IPE, and therefore, the plant-specific IPE provides no information to supplement the conclusions from the generic analysis.

Conclusion:

Since the selection criteria have not been satisfied, radioactive effluent instrumentation and area radiation monitors will be relocated to the Offsite Dose Calculation Manual (ODCM) and Final Safety Analysis Report and requirements will be implemented by plant procedures. There is no change to the existing requirements and no change to the level of safety of facility operation.

Maintaining this requirement in the FSAR is acceptable because the requirements of 10 CFR 50.59, Changes, Tests and Experiments, is designed to assure that changes to the FSAR do not result in any of the following: changes to the Technical Specification requirements; significant increases in the probability or consequences of accidents previously evaluated; the possibility of a new or different kind of accident; or a significant reduction in a margin of safety. Additionally, IP3 programs that implement FSAR changes in accordance with 10 CFR 50.59 require periodic submittal of FSAR and Bases changes to the NRC for review. The ODCM is approved by the NRC prior to implementation and any change to the ODCM is controlled in accordance with ITS 5.5.1. ITS 5.5.1 provides for regulatory oversight of changes to the ODCM by requiring that a determination that the change(s): a) maintains the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR

50.36a, and 10 CFR 50 Appendix I; and, b) does not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations. Additionally, ITS 5.5.1.c requires that all changes to the ODCM be submitted to the NRC with the Radioactive Effluent Release Report required by ITS 5.6. Therefore, moving CTS ETS 4.7 and CTS Definitions 1.19, 1.20, 1.21, 1.24, and 1.25 to the ODCM does not change any existing requirement and ITS 5.5.1 provides an appropriate change control process for the ODCM. Therefore, this change has no significant adverse impact on safety. This change will maintain an appropriate change control process and an appropriate level of regulatory oversight is maintained for the information being relocated out of the Technical Specifications.

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Relocated Item No: R.12

Refueling (Manipulator Cranes and Spent Fuel Cask)

PART 2:

Justification for Relocation of CTS Requirement to Licensee Controlled Document