

UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

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INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET NO. 50-315

DONALD C. COOK NUCLEAR PLANT UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 80 License No. DPR-58

- 1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated December 15, 1983, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.



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ATTACHMENT TO LICENSE AMENDMENT .

AMENDMENT NO. 80 TO FACILITY LICENSE NO. DPR-58

DOCKET NO. 50-315

Revise Appendix A as follows:

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Included for convenience; corrected to show deletion 4 of "Amendment 63" revision.

INSTRUMENTATION

a.

SURVEILLANCE REQUIREMENTS (Continued)

a. If the absolute value of $\frac{R_{ij}-\overline{R}_{j}}{\overline{R}_{i}}$ is greater than $2\sigma_{j}$, another

map shall be completed to verify the new \overline{R}_{j} . If the second map shows the first to be in error, the first map shall be disregarded. If the second map confirms the new \overline{R}_{j} , four more maps (including rodded configurations allowed by the insertion limits) will be completed so that a new \overline{R}_{j} and σ_{j} can be defined from the six new maps.

4.3.3.6.2 The APDMS shall be demonstrated OPERABLE:

By performance of a CHANNEL FUNCTIONAL TEST within 7 days prior to its use and at least once per 31 days thereafter when used for monitoring $F_i(Z)$.

At least once per 18 months, during shutdown or below 5% of RATED THERMAL POWER, by performance of a CHANNEL CALIBRATION.

D. C. COOK-UNIT 1'

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• [EMERGENCY CORE COOLING SYSTEMS
	ECCS SUBSYSTEMS - Tavg > 350°F
	LIMITING CONDITION FOR OPERATION
	3.5.2 Two independent ECCS subsystems shall be OPERABLE with each subsystem comprised of:
	a. One OPERABLE centrifugal charging pump,
	b. One DPERABLE safety injection pump;
	c. One OPERABLE residual heat removal heat exchanger,
	d. One OPERABLE residual heat removal pump, and
	e. An OPERABLE flow path capable of taking suction from the refueling water storage tank on a safety injection signal and transferring suction to the containment sump during the recirculation phase of operation.
	<u>APPLICABILITY</u> : MODES 1, 2 and 3. <u>ACTION</u> : a. With one ECCS subsystem inoperable, restore the inoperable sub- system to OPERABLE status within 72 hours or be in HOT SHUTDOWN within the next 12 hours.
	 b. In the event the ECCS is actuated and injects water into the Reactor Coolant System, a Special Report shall be prepared and submitted to the Commission pursuant to Specification 5.9.2 within 90 days describing the circumstances of the actuation and the total accumulated actuation cycles to date.
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CONTAINMENT AIR RECIRCULATION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.6.5.6 Two independent containment air recirculation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment air recirculation system inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.6 Each containment air recirculation system shall be demonstrated OPERABLE at least once per 3 months on a STAGGERED TEST BASIS by:

- Verifying that the return air fan starts on an auto-start
 signal after a 9 + 1 minute delay and operates for at least
 15 minutes,
- b. Verifying that with the return air fan discharge backdraft damper locked closed and the fan motor energized, the static pressure between the fan discharge and the backdraft damper is > 4.0 inches, water gauge.
- c. Verifying that with the fan off, the return air fan damper opens when a force of < 11 lbs is applied to the counterweight, and
- d. Verifying that the motor operated value in the suction line to the containment's lower compartment opens after a 9 ± 1 minute delay.

D. C. COOK-UNIT 1

FLOOR DRAINS

LIMITING CONDITION FOR OPERATION

3.6.5.7 The ice condenser floor drains shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the ice condenser floor drain inoperable, restore the floor drain to OPERABLE status prior to increasing the Reactor Coolant System temperature above 200°F.

SURVEILLANCE REOUIREMENTS

4.6.5.7 Each ice condenser floor drain shall be demonstrated OPERABLE at least once per 18 months during shutdown by:

a. Verifying that valve gate opening is not impaired by ice, frost or debris,

b. Verifying that the valve seat is not damaged,

c. Verifying that the value gate opens when a force of \leq 100 lbs is applied, and

d. Verifying that the 12 inch drain line from the ice condenser floor to the containment lower compartment is unrestricted.

7 4:

D. C. COOK-UNIT 1

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REFUELING OPERATIONS

COOLANT CIRCULATION

LIMITING CONDITION FOR OPERATION

3.9.8 At least one residual heat removal loop shall be in operation.

APPLICABILITY: MODE 6.

ACTION:

- a. With less than one residual heat removal loop in operation, except as provided in b. below, suspend all operations involving an increase in the reactor decay heat load or a reduction in boron concentration of the Reactor Coolant System. Close all containment penetrations providing direct access from the containment atmosphere to the outside atmosphere within 4 hours.
- b. The residual heat removal loop may be removed from operation for up to 1 hour per 8 hour period during the performance of CORE ALTERATIONS in the vicinity of the reactor pressure vessel hot legs.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.8 A residual heat removal loop shall be determined to be in operation and circulating reactor coolant at a flow rate of \geq 3000 gpm at least once per 24 hours.

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REFUELING OPERATIONS

CONTAINMENT PURGE AND EXHAUST ISOLATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.9 The Containment Purge and Exhaust isolation system shall be OPERABLE.

<u>APPLICABILITY</u>: During Core Alterations or movement of irradiated fuel within the containment.

ACTION:

With the Containment Purge and Exhaust isolation system inoperable, close each of the Purge and Exhaust penetrations providing direct access from the containment atmosphere to the outside atmosphere. The provision of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.9 The Containment Purge and Exhaust isolation system shall be demonstrated OPERABLE within 100 hours prior to the start of and at least once per 7 days during CORE ALTERATIONS by verifying that containment Purge and Exhaust isolation occurs on manual initiation and on a high radiation signal from each of the containment radiation instrumentation monitors.



Figure 6.2-2 Facility Organization - Donald C. Cook - Unit No.]

Amendment No. 80





UNITED STATES NUCLEAR REGULATORY COMMISSION WASHINGTON, D. C. 20555

INDIANA AND MICHIGAN ELECTRIC COMPANY

DOCKET.NO. 50-316

DONALD C. COOK NUCLEAR PLANT UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No.63 License No. DPR-74

1. The Nuclear Regulatory Commission (the Commission) has found that:

- A. The application for amendment by Indiana and Michigan Electric Company (the licensee) dated December 15, 1983, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
- B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
- C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
- D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and .
- E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

- Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-74 is hereby amended to read as follows:
 - (2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 63 , are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

- 3. The license is also amended by the deletion of License Conditions 2.C.(3)(h) on "Containment Sump Design Verification, 2.C.(3)(1) on "Residual Heat Removal System Low Flow Alarm," 2.C.(3)(t) on "Spent Fuel Pool Modifications," and 2.E. on condition to protect the environment.
- 4. The license is further amended by changes to License Condition 2.C.(1) by changing the maximum power level of 3391 to 3411 megawatts thermal.
- 5. The change in Technical Specifications is to become effective within 30 days of receipt of the amendment. In the period between receipt of the amendment and the effective date of the new Technical Specifications, the licensee shall adhere to the Technical Specifications for the systems, components, or operation existing at the time. The period of time during changeover of systems, components or operation shall be minimized or compensated for by suitable temporary alternatives.
- 6. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

arda Steven A. Varga, Chjef

Operating Reactors Branch No. 1 Division of Licensing

 Attachment:
 Changes to the Technical Specifications

Date of Issuance: April 27, 1984

ATTACHMENT TO LICENSE AMENDMENT

AMENDMENT NO. 63 TO FACILITY LICENSE NO. DPR-74

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Revise Appendix A as follows:

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Included for convenience Included for convenience; corrected to show deletion of "Amendment 63" revision. **

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III

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3/4.1 REACTIVITY CONTROL SYSTEMS

3/4.1.1 BORATION CONTROL

SHUTDOWN MARGIN - $T_{avg} > 200^{\circ}F$

LIMITING CONDITION FOR OPERATION

3.1.1.1 The SHUTDOWN MARGIN shall be $> 1.6\% \Delta k/k$.

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

ACTION:

With the SHUTDOWN MARGIN < 1.6% $\Delta k/k$, immediately initiate and continue boration at \geq 10 gpm of 20,000 ppm boric acid solution or equivalent until the required SHUTDOWN MARGIN is restored.

SURVEILLANCE REQUIREMENTS

4.1.1.1.1 The SHUTDOWN MARGIN shall be determined to be > 1.6% $\Delta k/k$:

- a. Within one hour after detection of an inoperable control rod(s) and at least once per 12 hours thereafter while the rod(s) is inoperable. If the inoperable control rod is immovable or untrippable, the above required SHUTDOWN MARGIN shall be increased by an amount at least equal to the withdrawn worth of the immovable or untrippable control rod(s).
- b. When in MODES 1 or $2^{\#}$, at least once per 12 hours by verifying that control bank withdrawal is within the limits of Specification 3.1.3.5.
- c. When in MODE 2^{##}, within 4 hours prior to achieving reactor criticality by verifying that the predicted critical control rod position is within the limits of Specification 3.1.3.5.

\$\$ Special Test Exception 3.10.1
#With K_{eff} > 1.0
##With K_{eff} <1.0</pre>

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POWER DISTRIBUTION LIMITS

DNB PARAMETERS

LIMITING CONDITION FOR OPERATION

3.2.5 The following DNB related parameters shall be maintained within the limits shown on Table 3.2-1:

a. Reactor Coolant System Tavg.

b. Pressurizer Pressure.

APPLICABILITY: MODE 1

ACTION:

With any of the above parameters exceeding its limit, restore the parameter to within its limit within 2 hours or reduce THERMAL POWER to less than 55 of RATED THERMAL POWER within the next 4 hours.

SURVEILLANCE REQUIREMENTS

4.2.5 Each of the parameters of Table 3.2-1 shall be verified to be within their limits at least once per 12 hours.

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TABLE 3.3-1 (Continued)

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REACTOR TRIP SYSTEM INSTRUMENTATION

FUNC	TIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
16.	Undervoltage-Reactor Coolant Pumps	4-1/bus	2	3	1	6 [#]
17.	Underfrequency-Reactor Coolant Pumps	4-]/bus	2	3	1	6 [#]
18.	Turbine Trip A. Low Fluid Oil Pressure B. Turbine Stop Valve Closure -	· · · 3 4	2 4	2 3 <u>.</u>	1	7 [#] 6 [#]
19.	Safety Injection Input from ESF	. 2	٦	Ź	1, 2	1
20.	Reactor Coolant Pump Breaker Position Trip A. Above P-8 B. Above P-7	1/breaker 1/breaker	1 2	<pre>l/breaker l/breaker per oper- ating loop</pre>	1 1 	10 11
21.	Reactor Trip Breakers	2	1	2	1, 2 and *	1
22.	Automatic Trip Logic	2	1 .	2	1, 2 and *	

1*

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INSTRUMENTATION

REMOTE SHUTDOWN INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.5 The remote shutdown monitoring instrumentation channels shown in Table 3.3-9 shall be OPERABLE with readouts displayed external to the control room.

APPLICABILITY: MODES 1, 2 and 3.

ACTION:

a. With the number of OPERABLE remote shutdown monitoring channels less than required by Table 3.3-9, either restore the inoperable
channel to OPERABLE status within 30 days, or be in HOT SHUTDOWN within the next 12 hours.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.5 Each remote shutdown monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-6.

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FIGURE 3.4-3

REACTOR COOLANT SYSTEM PRESSURE – TEMPERATURE LIMITS VERSUS COOLDOWN RATES

EMERGENCY CORE COOLING SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

- d. At least once per 18 months by:
 - 1. Verifying automatic isolation and interlock action of the RHR system from the Reactor Coolant System when the Reactor Coolant System pressure is above 600 psig.
 - 2. A visual inspection of the containment sump and verifying that the subsystem suction inlets are not restricted by debris and that the sump components (trash racks, screens, etc.) show no evidence of structural distress or corrosion.

e. At least once per 18 months, during shutdown, by:

- Verifying that each automatic valve in the flow path actuates to its correct position on a Safety Injection test signal.
 - 2. Verifying that each of the following pumps start automatically upon receipt of a safety injection test signal:

<u>></u> 2405 psig

> 1445 psig

- a) Centrifugal charging pump
- b) Safety injection pump
- c) Residual heat removal pump
- f. By verifying that each of the following pumps develops the indicated discharge pressure on recirculation flow when tested pursuant to Specification 4.0.5:

Residual heat removal pump' > 195 psig

- 1. Centrifugal_charging pump
- 2. Safety Injection pump

3.

- g. By verifying the correct position of each mechanical stop for the the following Emergency Core Cooling System throttle valves:
 - Within 4 hours following completion of each valve stroking operation or maintenance on the valve when the ECCS subsystems are required to be OPERABLE.

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SPRAY ADDITIVE SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.2 The spray additive system shall be OPERABLE with:

- a. A spray additive tank containing a volume of between 4000 and 4600 gallons of between 30 and 34 percent by weight NaOH solution, and
- b. Two spray additive eductors each capable of adding NaOH solution from the chemical additive tank to a containment spray system pump flow.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With the spray additive system inoperable, restore the system to OPERABLE status within 7Z hours or be in at least HOT STANDBY within the next 6 hours; restore the spray additive system to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.2 The spray additive system shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position.

b. At least once per 6 months by:

1. Verifying the contained solution volume in the tank, and

: :

2. Verifying the concentration of the NaOH solution by chemical analysis.

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LUNTAINMENI STSTERS

ICE CONDENSER DUCKS

LIMITING CONDITION FOR OPERATION

3.6.5.3 The ice condenser inlet doors, intermediate deck doors; and top deck doors shall be closed and OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

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With one or more ice condenser doors open or otherwise inoperable; POWER OPERATION may continue for up to 14 days provided the ice bed temperature is monitored at least once per 4 hours and the maximum ice bed temperature. is maintained < 27°F; otherwise, restore the doors to their closed positions or OPERABLE status (as applicable) within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the. following 30 hours.

SURVEILLANCE REQUIREMENTS

3.

COOK - UNIT 2

4.6.5.3.1 Inlet Doors - Ice condenser inlet doors shall be: .

Continuously monitored and determined closed by the inlet door position monitoring system, and

b. Demonstrated OPERABLE during shutdown at least once per 3 months during the first year after the ice bed is fully loaded. and at least once per 6 months' thereafter by:

. Verifying that the torque required to initially open each door is \leq 675 inch pounds.

Verifying that opening of each door is not impaired by ice, frost or debris.

Testing a sample of at least 25% of the doors and verifying that the torque required to open each door is less than 195 inch-pounds when the door is 40 degrees open. This torque is defined as the "door opening torque" and is. equal to the nominal door torque plus a frictional torque component. The doors selected for determination of the "door opening torque" shall be selected to ensure that all doors are tested at least once during four test intervals.

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SURVEILLANCE REQUIREMENTS (Continued)

		e	-		•
4	Testing a sam ing that the is greater th open. This t and is equal torque compon the "door clo all doors are intervals.	ple of at least torque required an 78 inch-poun orque is define to the nominal ent. The doors sing torque" sh tested at leas	25% of the to keep eac ds when the d as the "do door torque selected fo all be selec t once durin	doors and h door fro door is 40 or closing minus a fr r determin ted to ens g four tes	verify- m closing degrees torque" ictional ation of ure that t
5.	Calculation of in accordance tional torque	of the frictiona with 3 and 4, . shall be \leq 40:	l torque of above. The inch-pounds.	each door calculated	tested fric-
4.6.5.3.2 Int door shall be: a. Veri insp	ermediate Deck fied closed ar ection at leas	Doors - Each i d'free of frost t once per 7 dá	ce condenser accumulatio ys, and	.intermedi n by a vis	ate deck.
b. Demo firs per dete and forc	nstrated OPERA t year after t 18.months ther rioration, by by ascertainin e shown below:	BLE at least on the ice bed is f eafter by visua verifying free ig free movement	ce per 3 mon ully loaded lly verifyin movement of when lifted	ths during and at lea g no struc the vent a with the	the st once tural ssemblies, applicable
••	Door		Lifti	ng Force.	
1	Adjacent to (Crane Wall	ʻ, <u><</u> 37.	4 1bs.	
2:.	n the state of	- ·			••
	to Crane Wall	Door Adjacent I	<u>́ <</u> 33.	8 1bs.	
, 3.	to Crane Wall Adjacent to (Door Adjacent L Containment Wall	<u><</u> 33. <u><</u> 31.	8 1bs. 8 1bs.	
3. 4.	Adjacent to (Paired with I Paired with I to Containmen	Door Adjacent L Containment Wall Door Adjacent ht Wall	<u><</u> 33. <u><</u> 31. <u><</u> 31.	8 1bs. 8 1bs. 0 1bs.	· · · · · · · · · · · · · · · · · · ·
3. 4. 4.6.5.3.3 Top determined clo	Adjacent to (Paired with I Paired with I to Containmen Deck Doors - osed and OPERA	Door Adjacent Containment Wall Door Adjacent It Wall Each ice conder BLE at least ond	<	8 lbs. 8 lbs. 0 lbs. door shal /s by visua	l be lly
3. 4. 4.6.5.3.3 Top determined clo verifying:	Adjacent to Crane Wall Adjacent to C Paired with I to Containment Deck Doors - osed and OPERA	Door Adjacent Containment Wall Door Adjacent It Wall Each ice conder BLE at least ond	<u><</u> 33. <u><</u> 31. <u><</u> 31. ser top deck ser ger 92 day	8 lbs. 8 lbs. 0 lbs. door shal /s by visua	l be lly
3. 4. 4.6.5.3.3 Top determined clo verifying:	Adjacent to Crane Wall Adjacent to C Paired with I to Containmen Deck Doors - osed and OPERA	Door Adjacent Containment Wall Door Adjacent It Wall Each ice conder BLE at least ond	≤ 33 . ≤ 31 . ≤ 31 . aser top deck te per 92 day	8 lbs. 8 lbs. 0 lbs. door shal /s by visua	l be lly

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DIVIDER BARRIER PERSONNEL ACCESS DOORS AND EQUIPMENT HATCHES

LIMTING CONDITION FOR OPERATION

3.6.5.5 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be OPERABLE and closed.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With a personnel access door or equipment hatch inoperable or open except for personnel transit entry and $T_{avg} > 200^{\circ}F$, restore the door or hatch to OPERABLE status or to its closed position (as applicable) within 1 hour or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.5.1 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined closed by a visual inspection prior to increasing the Reactor Coolant System T_{avg} above 200°F and after each personnel transit entry when the Reactor Coolant System T_{avg} is above 200°F.

4.6.5.5.2 The personnel access doors and equipment hatches between the containment's upper and lower compartments shall be determined OPERABLE by visually inspecting the seals and sealing surfaces of these penetrations and verifying no detrimental misalignments, cracks or defects in the sealing surfaces, or apparent deterioration of the seal material:

a. Prior to final closure of the penetration each time it has been opened, and

b. At least once per 10 years for penetrations containing seals fabricated from resilient materials.

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BASES -

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

3/4.6.2.1 CONTAINMENT SPRAY SYSTEM

The OPERABILITY of the containment spray system ensures that containment depressurization and cooling capability will be available in the event of a LOCA. The pressure reduction and resultant lower containment leakage rate are consistent with the assumptions used in the accident analyses.

3/4.6.2.2 SPRAY ADDITIVE SYSTEM

The OPERABILITY of the spray additive system ensures that sufficient NaOH is added to the containment spray in the event of a LOCA. The limits on NaOH volume and concentration ensure a pH value of between 8.5 and 11.0 for the solution recirculated within containment after a LOCA. This pH band minimizes the evolution of iodine and minimizes the effect of chloride and caustic stress corrosion on mechanical systems and components. These assumptions are consistent with the iodine removal efficiency assumed in the accident analyses.

The contained water volume limit includes an allowance for water not usable because of tank discharge location or other physical characteristics.

3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment. Containment isolation within the time limits specified ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

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BASES

3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit is capable of controlling the expected hydrogen generation associated with 1) zirconium-water reactions, 2) radiolytic decomposition of water and 3) corrosion of metals within containment. These hydrogen control systems : are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA", March 1971.

3/4.6.5 ICE CONDENSER

The requirements associated with each of the components of the ice condenser ensure that the overall system will be available to provide sufficient pressure suppression capability to limit the containment peak pressure transient to less than 12 psig during LOCA conditions.

3/4.6.5.1 ICE BED

The OPERABILITY of the ice bed ensures that the required ice inventory will 1) be distributed evenly through the containment bays, 2) contain sufficient boron to preclude dilution of the containment sump following the LOCA and 3) contain sufficient heat removal capability to condense the reactor system volume released during a LOCA. These conditions are consistent with the assumptions used in the accident analyses.

The minimum weight figure of 1220 pounds of ice per basket contains a 10% conservative allowance for ice loss through sublimation which is a factor of 10 higher than assumed for the ice condenser design. In the event that observed sublimation rates are equal to or lower than design predictions after three years of operation, the minimum ice baskets weight may be adjusted downward. In addition, the number of ice baskets required to be weighted each 9 months may be reduced after 3 years of operation if such a reduction is supported by observed sublimation data.

3/4.6.5.2 ICE BED TEMPERATURE MONITORING SYSTEM

The OPERABILITY of the ice bed temperature monitoring system ensures that the capability is available for monitoring the ice temperature. In the event the monitoring system is inoperable, the ACTION requirements provide assurance that the ice bed heat removal capacity will be retained within the specified time limits.

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Figure 6.2-2 Facility Organization - Donald C. Cook - Unit No. 2

TABLE 6.2-1

MINIMUM SHIFT CREW COMPOSITION#

	APPLICABLE MODES				
	1, 2, 3 & 4	546			
SOL	1**	1*			
OL '	2	t : : 1			
Non-Licensed	2	· 1			
Shift Technical Advisor	1**	• None required.			

*Does not include the licensed Senior Reactor Operator or Senior Reactor Operator Limited to Fuel Handling, supervising CORE ALTERATIONS.

#Shift crew composition may be less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 6.2-1.

**Shared with D. Cl. Cook Unit' 1.

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