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ZIMMERMAN, S. R. Carolina Power & Light Co.
RECIP. NAME RECIPIENT AFFILIATION
DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Forwards addl comments on final draft Tech Specs, including justification & 14 marked-up pages for comments.

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CP&L

Carolina Power & Light Company

SERIAL: NLS-86-357

SEP 18 1986

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NO. 1 - DOCKET NO. 50-400
COMMENTS ON FINAL DRAFT TECHNICAL SPECIFICATIONS

Dear Mr. Denton:

Carolina Power & Light Company submits additional comments on the final draft Technical Specifications (TS) for the Shearon Harris Nuclear Power Plant. Attachment 1 provides seven comments (Record Numbers 739 and 800 through 805) on the TS as well as a justification for each comment. Attachment 2 provides a marked-up copy of fourteen TS pages for the corresponding comments provided in Attachment 1.

If you have any questions, please contact Mr. Gregg A. Sinders at (919) 836-8168.

Yours very truly,

S. R. Zimmerman
Manager
Nuclear Licensing Section

SRZ/GAS/pgp (4095GAS)

Attachments

cc: Mr. B. C. Buckley (NRC)
Mr. G. F. Maxwell (NRC-SHNPP)
Dr. J. Nelson Grace (NRC-RII)
Mr. R. A. Benedict (NRC)

B001
1/1

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ATTACHMENT 1

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 739

Comment Type: ERROR

LCO Number: 3.08.01.01

Page Number: 3/4 8-7 & 8

Section Number: 4.8.1.1.2.f.10

Comment:

ADD A NEW ITEM 4.8.1.1.2.f.10.f AS FOLLOWS:
f. Loss of generator potential transformer circuit.
ADD TO ITEM 4.8.1.1.2.f.6.c "loss of generator potential transformer circuit" AS AN ADDITIONAL SIGNAL.
ADD TO BASES PAGE B 3/4 8-2 AT THE END OF THE SECOND PARAGRAPH THE FOLLOWING SENTENCE:
"The inclusion of the loss of generator potential transformer circuit lockout trip is a design feature based upon coincident logic and is an anticipatory trip prior to diesel generator overspeed."

Basis

THE ADDITION OF THESE ITEMS IS NECESSARY TO ENSURE THAT ALL DIESEL LOCKOUT FEATURES ARE TESTED. THE BASES HAVE BEEN REVISED TO EXPLAIN THE REASON FOR THE INCLUSION OF THIS LOCKOUT IN THE SURVEILLANCE PER REQUEST FROM J.T. BEARD OF NRR.

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 800

Comment Type: IMPROVEMENT

LCO Number: 3.03.02

Page Number: 3/4 3-38 & 40

Section Number: TABLE 3.3-5

Comment:

ON PAGE 3/4 3-38 ADD NOTE "(9)" TO THE RESPONSE TIME FOR ITEMS 4b, 6, AND 7.
ON PAGE 3/4 3-40 ADD A NEW NOTE (9) AS FOLLOWS:
(9) Applicable to Main Steam Isolation Valves and Main Steam Bypass Isolation Valves only., Other valves that get an MSIV signal (e.g. MS drains to condenser) are covered in Table 3.6-1.
ON PAGE 3/4 3-40 ADD THE FOLLOWONG SENTENCE TO NOTE (3):
Other valves that get a Feedwater Isolation signal (e.g. ammonia and hydrazine connections) are covered in Table 3.6-1.

Basis

THIS CHANGE IS NECESSARY TO CLARIFY ~~WHICH~~ WHICH VALVES ARE REQUIRED TO HAVE A RESPONSE TIME OF 12 SECONDS. THE CONTAINMENT ISOLATION VALVE TABLE 3.6-1 LISTS SEVERAL VALVES UNDER MAIN STEAM LINE ISOLATION WHICH HAVE CLOSURE TIMES OF <60. THESE VALVES ARE NOT ASSUMED IN THE ANALYSIS TO CLOSE IN THE 12 SECONDS THAT THE BYPASS AND MAIN STEAM ISOLATION VALVES ARE ASSUMED TO CLOSE. THIS CHANGE WILL CLARIFY THAT ONLY THE MAIN STEAM ISOLATION AND MAIN STEAM BYPASS ISOLATION VALVES ARE REQUIRED TO CLOSE IN 12 SECONDS.
A SIMILAR WORDING CHANGE IS PROPOSED FOR NOTE (3) OF TABLE 3.3-5 ON THE MAIN FEEDWATER SYSTEM.

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 801 Comment Type: ERROR

LCO Number: 6.02.02 Page Number: 6-4

Section Number: FIGURE 6-2

Comment:

ON THE FIGURE FOR THE PLANT ORGANIZATION - ADD THE TITLE "PLANS AND PROGRAMS" TO THE TABLE.

Basis

THIS CHANGE IS PURELY AN ADMINISTRATIVE CHANGE IN THAT THE TITLE OF THE POSITION OF "PLANS AND PROGRAMS" IS A NEW POSITION CREATED WITHIN THE PLANT ORGANIZATION. THE FSAR IS CURRENTLY BEING REVISED AND WILL SHOW THIS NEW POSITION.

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 802

Comment Type: ERROR

LCO Number: 3.08.04.01

Page Number: 3/4 8-32,36,38

Section Number: TABLE 3.8-1

Comment:

ON PAGE 3/4 8-32 CHANGE THE VALUE OF THE PRIMARY PROTECTION FOR ITEMS 176 AND 179 TO "6 A FUSE".
ON PAGE 3/4 8-36 CHANGE THE VALUE OF THE PRIMARY PROTECTION FOR ITEM 240 TO "110 A BREAKER".
ON PAGES 3/4 8-38 AND 38a CHANGE THE EQUIPMENT DESCRIPTIONS FOR ITEMS 275, 276, 277, 278, 284, 285, 286, 287, AND 288 FROM "RA-ICA-....." TO "RA-1CR-.....".
ON PAGE 3/4 8-38a CHANGE THE VALUE OF THE SECONDARY PROTECTION FOR ITEM 286 TO "15 A BREAKER".

Basis

ALL OF THE CHANGES IN THE PRIMARY AND SECONDARY PROTECTION ARE DUE TO RECENT PLANT DESIGN CHANGES. THESE CHANGES ARE NECESSARY FOR THE TECH SPECS TO AGREE WITH THE AS-BUILT PLANT CONFIGURATION. THE CHANGES TO THE EQUIPMENT DESCRIPTIONS ARE TO CORRECT ERRORS THAT WERE MADE IN TRANSCRIBING THE INFORMATION FROM ONE DOCUMENT ONTO THE PAGES SUBMITTED TO THE NRC REVIEWER.

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 803

Comment Type: IMPROVEMENT

LCO Number: 3.08.01.01

Page Number: 3/4 8-8 & 8a

Section Number: 4.8.1.1.f.11&12

Comment:

ADD NEW ITEMS 4.8.1.1.f.11 AND .12 AS FOLLOWS:
11) Verifying the generator capability to reject a load of between 6200 and 6400 kW without tripping. The generator voltage shall not exceed 7590 volts during and following the load rejection;
12) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;

...

Basis

THIS CHANGE IS TO INCORPORATE TWO SURVEILLANCES INTO THE SPECIFICATIONS AS DIRECTED BY THE NRR REVIEWER. THE NEW SURVEILLANCE REQUIREMENTS ARE TAKEN DIRECTLY FROM THE STANDARD REV. 5 TECH SPECS EXCEPT FOR THE SPECIFIC VALUES IN ITEM f.11. THESE VALUES ARE PLANT SPECIFIC NUMBERS AND ARE CONSISTENT WITH VALUES IN THE BALANCE OF THIS SPECIFICATION.

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 804

Comment Type: IMPROVEMENT

LCO Number: 3.08.04.01

Page Number: 3/4 8-21 & 35

Section Number: TABLE 3.8-1

Comment:

PAGE 3/4 8-21 ITEMS 9, 10 & 11 - IN THE COLUMN UNDER PRIMARY PROTECTION, ADD THE FOLLOWING TO THE BREAKER SIZE:
"with a 200 A sensor".
PAGE 3/4 8-35 ITEMS 229, 230 & 231 - IN THE COLUMN UNDER PRIMARY PROTECTION, ADD THE FOLLOWING TO THE BREAKER SIZE:
"with a 200 A sensor".

Basis

THIS CHANGE IS MADE TO CLARIFY THE ACTUAL PRIMARY PROTECTION OF THE EQUIPMENT AND TO ELIMINATE X POSSIBLE CONFUSION AS TO A PRIMARY PROTECTIVE DEVICE ~~HAVE~~ A HIGHER RATING THAN THE SECONDARY PROTECTION.

HAVING

CP&L Comments

SHNPP Final Draft Technical Specifications

Record Number: 805

Comment Type: IMPROVEMENT

LCO Number: 3.08.04.01

Page Number: 3/4 8-23 & 36

Section Number: TABLE 3.8-1

Comment:

PAGE 3/4 8-23 ITEMS 30, 31, 32 & 33 AND ON PAGE 3/4 8-36 ITEMS 238, 239, 240 & 241 - IN THE COLUMN UNDER PRIMARY PROTECTION, ADD THE PHRASE "at 120v A.C." TO EACH ITEM. ALSO, IN THE COLUMN UNDER SECONDARY PROTECTION FOR EACH ITEM, ADD THE PHRASE "at 480v A.C.".

Basis

THIS CHANGE IS MADE TO ELIMINATE POSSIBLE CONFUSION AS TO THE PRIMARY PROTECTION HAVING A HIGHER RATING THAN THE SECONDARY PROTECTION FOR THIS EQUIPMENT.

ATTACHMENT 2

FINAL DRAFT
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TABLE 3.3-5 (Continued)

ENGINEERED SAFETY FEATURES RESPONSE TIMES

INITIATING SIGNAL AND FUNCTION	RESPONSE TIME IN SECONDS
3. Pressurizer Pressure--Low (Continued)	
a. Safety Injection (ECCS) (Continued)	
5) Auxiliary Feedwater Motor-Driven Pumps	≤ 60
6) Emergency Service Water Pumps	$\leq 32^{(1)}/22^{(8)}$
7) Containment Fan Coolers	$\leq 27^{(1)}/17^{(8)}$
8) Control Room Isolation	N.A.
4. Main Steam Line Pressure--Low	
a. Safety Injection (ECCS)	$\leq 12^{(5)}/22^{(4)}$
1) Reactor Trip	≤ 2
2) Feedwater Isolation	$\leq$ ~~X~~ 12$^{(3)}$
3) Containment Phase "A" Isolation	$< 62^{(2)}/72^{(1)}$
4) Containment Ventilation Isolation	$\leq 4.75^{(6)}$
5) Auxiliary Feedwater Motor-Driven Pumps	≤ 60
6) Emergency Service Water Pumps	$\leq 32^{(1)}/22^{(8)}$
7) Containment Fan Coolers	$\leq 27^{(1)}/17^{(8)}$
8) Control Room Isolation	N.A.
b. Steam Line Isolation	$\leq$ ~~X~~ $12^{(9)}$
5. Containment Pressure--High-3	
a. Containment Spray	$\leq 18.5^{(8)}/32.2^{(1)}$
b. Phase "B" Isolation	$\leq 22.5^{(1)}/12^{(2)}$
6. Containment Pressure--High-2 Steam Line Isolation	$\leq$ ~~X~~ $12^{(9)}$
7. Negative Steam Line Pressure Rate -- High Steam Line Isolation	$\leq$ ~~X~~ $12^{(9)}$

TABLE 3.3-5 (Continued)

TABLE NOTATIONS

(1) Diesel generator starting and sequence loading delays included.

(2) Diesel generator starting and sequence loading delay not included. Offsite power available.

(3) Applicable to Main Feedwater Isolation Valves and Main Feedwater Bypass Isolation Valves ONLY. OTHER VALVES THAT GET A FEEDWATER ISOLATION SIGNAL (e.g. AMMONIA AND HYDRAZINE CONNECTIONS) ARE COVERED IN TABLE 3.6-1.

(4) Diesel generator starting and sequence loading delay included. RHR pumps not included.

(5) Diesel generator starting and sequence loading delays not included. RHR pumps not included.

(6) Isolation of Normal Containment Purge. This value is not applicable to Pre-entry Containment Purge which is permitted to be operating only in MODES 5 or 6 as per Specification 3.6.1.7.

(7) Response time testing of radiation monitors is not required.

(8) Diesel generator starting delay not included, but sequencer loading delays are included.

(9) APPLICABLE TO MAIN STEAM ISOLATION VALVES AND MAIN STEAM BYPASS ISOLATION VALVES ONLY. OTHER VALVES THAT GET AN MSIV SIGNAL (e.g. MS DRAINS TO CONDENSER) ARE COVERED IN TABLE 3.6-1.

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SURVEILLANCE REQUIREMENTS (Continued)

4.8.1.1.2 (Continued)

a) Verifying de-energization of the emergency buses and load shedding from the emergency buses.

b) Verifying the diesel starts** on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected shutdown loads through the load sequencer, and operating for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization of these loads, the steady-state voltage and frequency shall be maintained at 6900 ± 690 volts and 60 ± 1.2 Hz.

5. Verifying that on a safety injection test signal (without loss of power) the diesel generator starts** on the auto-start signal and operates on standby for greater than or equal to 5 minutes.

6. Simulating a loss of offsite power in conjunction with a safety injection test signal, and

a) Verifying de-energization of the emergency buses and load shedding from the emergency buses.

b) Verifying the diesel starts** on the auto-start signal, energizing the emergency buses with permanently connected loads in less than or equal to 10 seconds, energizing the auto-connected emergency (accident) loads through the sequencing timers, and operating for greater than or equal to 5 minutes and maintaining the steady-state voltage and frequency at 6900 ± 690 volts and 60 ± 1.2 Hz.

c) Verifying that all diesel generator trips, except engine overspeed, generator differential, and emergency bus differential are automatically bypassed upon loss of offsite power signal ~~or~~ IN CONJUNCTION WITH a safety injection signal.

LOSS OF GENERATOR POTENTIAL TRANSFORMER CIRCUIT

**This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

SURVEILLANCE REQUIREMENTS (Continued)

7. Verifying the diesel generator operates** for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to 6800-7000 kW*** and, during the remaining 22 hours of this test, the diesel generator shall be loaded to an indicated 6200-6400 kW***. Within 5 minutes after completing this 24-hour test, perform Surveillance Requirement 4.8.1.1.2.f.6 b).#

8. Verifying that the auto-connected loads to each diesel generator do not exceed the continuous rating of 6500 kW;

9. Verifying the diesel generator's capability to:

   a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
   b) Transfer its loads to the offsite power source, and
   c) Proceed through its shutdown sequence.

10. Verifying that the following diesel generator lockout features prevent diesel generator operation:

    a) Engine overspeed
    b) Generator differential
    c) Emergency bus differential
    d) Emergency Stop
    e) Operational and maintenance switch in the maintenance mode.
    f) Loss of Generator Potential Transformer circuit

INSERT FROM PAGE 3/4 8-8A

g. At least once per 10 years or after any modifications which could affect diesel generator interdependence by starting** both diesel generators simultaneously, during shutdown, and verifying that both diesel generators accelerate to at least 450 rpm in less than or equal to 10 seconds.

h. At least once per 10 years by:

   1) Draining each main fuel oil storage tank, removing the accumulated sediment, and cleaning the tank using a sodium hypochlorite solution or other appropriate cleaning solution, and

---

**This test shall be conducted in accordance with the manufacturer's recommendations regarding engine prelube and warmup procedures, and as applicable regarding loading recommendations.

***This band is meant as guidance to avoid routine overloading of the engine. Loads in excess of this band for special testing or momentary variations due to changing bus loads shall not invalidate the test.

#If Specification 4.8.1.1.2f.6 b) is not satisfactorily completed, it is not necessary to repeat the preceding 24-hour test. Instead, the diesel generator may be operated at 6200-6400 kW for 1 hour or until operating temperature has stabilized.

11) Verifying the generator capability to reject a load of BETWEEN 6200 AND 6400 kW without tripping. The generator voltage shall not exceed 7590 volts during and following the load rejection;

12) Verifying that with the diesel generator operating in a test mode, connected to its bus, a simulated Safety Injection signal overrides the test mode by: (1) returning the diesel generator to standby operation, and (2) automatically energizing the emergency loads with offsite power;

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TABLE 3.8-1

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
1	MOV-2CT-V6SA-1 (Motor) (Isolation Valve)	15 A Breaker	15 A Breaker
2	MOV-2CT-V6SA-1 (Valve Limit Switch Control)	8 A Fuse	15 A Breaker
3	MOV-2CT-V7SB-1 (Motor) (Isolation Valve)	15 A Breaker	15 A Breaker
4	MOV-2CT-V7SB-1 (Valve Limit Switch Control)	8 A Fuse	15 A Breaker
5	MOV-2SI-V571SA-1 (Motor) (Isolation Valve)	30 A Breaker	30 A Breaker
6	MOV-2SI-V571SA-1 (Valve Limit Switch-IND & ANN)	8 A Fuse	15 A Breaker
7	MOV-2SI-V570SB-1 (Motor) (Isolation Valve)	30 A Breaker	30 A Breaker
8	MOV-2SI-V570SB-1 (Valve Limit Switch-IND & ANN)	8 A Fuse	15 A Breaker
9	Containment Fan Cooler AH-37 (1A-NNS)	1600 A Switch Gear Breaker	400 A Fuse
10	Containment Fan Cooler AH-38 (1A-NNS)	1600 A Switch Gear Breaker	400 A Fuse
11	Containment Fan Cooler AH-39 (1A-NNS)	1600 A Switch Gear Breaker	400 A Fuse
12	Rod Control Drive Mech Fan E-80 (1A-NNS)	100 A Breaker	100 A Breaker
13	Rod Control Drive Mech Fan E-81 (1A-NNS)	100 A Breaker	100 A Breaker

WITH A 200 A SENSOR.

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
29	Reactor Coolant Pump (1A-SN)	Relay Trips Feeder Breaker	Relay Trips Upstream Breaker
30	Lighting Panel (LP-105)	~~70~~ 150 A Breaker	~~150~~ 70 A Breaker
31	Lighting Panel (LP-106)	~~50~~ 100 A Breaker	~~60~~ 50 A Breaker
32	Lighting Panel (LP-101)	~~60~~ 125 A Breaker	~~125~~ 60 A Breaker
33	Lighting Panel (LP-102)	~~60~~ 125 A Breaker	~~125~~ 60 A Breaker
34	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse
35	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse
36	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse
37	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse
38	Elevator Disc Switch	100 A Breaker	100 A Breaker
39	Power Receptacles 1-2 & 1-6	60 A Breaker	60 A Breaker
40	Power Receptacles 1-9 & 1-13	60 A Breaker	60 A Breaker
41	Power Receptacles 1-10 & 1-14	60 A Breaker	60 A Breaker
42	Reactor Coolant Pump 1A-SN Oil BRG Lift Pump	30 A Breaker	30 A Breaker
43	Disk Switch for 5-Ton Monorail	50 A Breaker	50 A Breaker
44	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse
45	Pressurizer Heater Back-Up (Group A)	90 A Breaker	100 A Fuse

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
168	Valve 2SP-V86SB-1	6 A Fuse	15 A Breaker
169	Valve 2SP-V81SB-1	6 A Fuse	15 A Breaker
170	Valve 2SP-V1SB-1	6 A Fuse	15 A Breaker
171	Valve 2SP-V11SB-1	6 A Fuse	15 A Breaker
172	Valve 2SP-V111SB-1	6 A Fuse	15 A Breaker
173	Valve 2SP-V113SB-1	6 A Fuse	15 A Breaker
174	Valve 2SP-V114SB-1	6 A Fuse	15 A Breaker
175	Valve 2SP-V115SB-1	6 A Fuse	15 A Breaker
176	Cont. Fan Cooler AH-1 Damper CV-D1SB-1 Motor	6 A Fuse	20 A Breaker
177	Cont. Fan Cooler AH-1 Damper CV-D1SB-1 Motor	6 A Fuse	20 A Breaker
178	Cont. Fan Cooler AH-1 Damper CV-D1SB-1 Pos. Sw.	6 A Fuse	20 A Breaker
179	Cont. Fan Cooler AH-4 Damper CV-D7SB-1 Motor	6 A Fuse	20 A Breaker
180	Cont. Fan Cooler AH-4 Damper CV-D7SB-1 Motor	6 A Fuse	20 A Breaker
181	Cont. Fan Cooler AH-4 Damper CV-D7SB-1 Pos. Sw.	6 A Fuse	20 A Breaker
182	RA-1CR-356 1B-SB	0.6 A Fuse	15 A Breaker
183	RA-1CR-356 1D-SB	0.6 A Fuse	15 A Breaker
184	Valve 2SP-V90SB-1	8 A Fuse	15 A Breaker
185	Valve 2SP-V91SB-1	8 A Fuse	15 A Breaker
186	Valve 2SP-V85SB-1	8 A Fuse	15 A Breaker

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
220	Integrated Head Cooling Fan E-80 (1B-NSS)	6 A Fuse	15 A Breaker
221	Integrated Head Cooling Fan E-81 (1B-NSS)	6 A Fuse	15 A Breaker
222	Damper CV-D10-1	6 A Fuse	15 A Breaker
223	RCP-1B-SN Space Heater	15 A Breaker	30 A Breaker
224	Integrated Head Cooling Fan E-80 (1B-NNS)	20 A Breaker	20 A Breaker
225	Integrated Head Cooling Fan E-81 (1B-NNS)	20 A Breaker	20 A Breaker
226	AH-37 (1B-NNS) Motor Space Heater	15 A Breaker	15 A Breaker
227	AH-38 (1B-NNS) Motor Space Heater	15 A Breaker	15 A Breaker
228	AH-39 (1B-NNS) Motor Space Heater	15 A Breaker	15 A Breaker
229	CFC-AH-37 (1B-NNS)	1600 A Breaker	400 A Fuse
230	CFC-AH-38 (1B-NNS)	1600 A Breaker	400 A Fuse
231	CFC-AH-39 (1B-NNS)	1600 A Breaker	400 A Fuse
232	CRDM Fan E-80 (1B-NSS)	100 A Breaker	100 A Breaker
233	CRDM Fan E-81 (1B-NSS)	100 A Breaker	100 A Breaker
234	Reactor Coolant Drain Tank Pump 1B	50 A Breaker	50 A Breaker
235	Containment Building Sump Pump 1B-NNS	50 A Breaker	50 A Breaker
236	Incore Instrument Drive Assemblies	15 A Breaker	15 A Breaker

WITH A 200 A SENSOR

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
237	MOV-1RC-V528SN-1 (8000C)	15 A Breaker	15 A Breaker
238	Lighting Panel LP-104	~~70~~ 150 A Breaker	~~150~~ 70 A Breaker
239	Lighting Panel LP-107 (N/E)	~~50~~ 100 A Breaker	50 A Breaker
240	Lighting Panel LP-103	~~50~~ 110 A Breaker	~~100~~ 50 A Breaker
241	Lighting Panel LP-123	~~60~~ 125 A Breaker	~~125~~ 60 A Breaker
242	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
243	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
244	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
245	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
246	Power Receptacles #1-12, 1-16	60 A Breaker	60 A Breaker
247	Power Receptacles #1-3, 1-7	60 A Breaker	60 A Breaker
248	Power Receptacles #1-4, 1-8	60 A Breaker	60 A Breaker
249	RCP-1B-SN Oil Bearing Lift Pump	30 A Breaker	30 A Breaker
250	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
251	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse
252	Pressurizer Heater Back-up Group "B"	90 A Breaker	100 A Fuse

AT 120v A.C.

AT 480v A.C.

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
267	Charcoal Temp. Detection Fan S-1 (1A-NNS)	6 A Fuse	15 A Breaker
268	Airborne Radioactivity Removal Unit S-1 (1A-NNS)	90 A Breaker	90 A Breaker
269	RCP-1C-SN Oil Bearing Lift Pump	30 A Breaker	30 A Breaker
270	Containment Building Sump Pump 1A-NNS	50 A Breaker	50 A Breaker
271	Airborne Radioactivity Removal Unit S-1 (1B-NNS)	90 A Breaker	90 A Breaker
272	Fuel Transfer Cont. Cab (Pump Motor)	15 A Breaker	15 A Breaker
273	RCC Change Fixt (Gripper Hoist Ratio Motor)	15 A Breaker	15 A Breaker
274	Fuel Transfer Manipulator Crane	30 A Breaker	30 A Breaker
275	RA-~~1CA~~-3584 (1CR)	0.6 A Fuse	20 A Breaker
276	RA-~~1CA~~-3585 (1CR)	0.6 A Fuse	15 A Breaker
277	RA-~~1CA~~-3586 (1CR)	0.6 A Fuse	15 A Breaker
278	RA-~~1CA~~-3587 (1CR)	0.6 A Fuse	15 A Breaker
279	2SI-V537 SA-1 Limit Switch	8 A Fuse	15 A Breaker
280	2MD-V36 SA-1 Limit Switch	8 A Fuse	15 A Breaker
281	Damper CV-D3 SA-1	6 A Fuse	20 A Breaker
282	AOV-2CP-B1 SA-1	6 A Fuse	20 A Breaker
283	Damper CV-D5 SA-1	6 A Fuse	20 A Breaker
284	RA-~~1CA~~-3575 1CR	0.6 A Fuse	15 A Breaker

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TABLE 3.8-1 (Continued)

CONTAINMENT PENETRATION CONDUCTOR
OVERCURRENT PROTECTIVE DEVICES

Item No.	Equipment Description	Primary Protection	Secondary Protection
285	RA - ~~ECA~~ - 3576	0.6 A Fuse	15 A Breaker
286	RA - ~~ECA~~ - 3577	0.6 A Fuse	15 ~~20~~ A Breaker
287	RA - ~~ECA~~ - 3582	0.6 A Fuse	20 A Breaker
288	RA - ~~ECA~~ - 3583	0.6 A Fuse	20 A Breaker
289	2BD - F4SN-1 (PCV-8400B) Position Switches	6 A Fuse	15 A Breaker
290	2BD - F5SN-1 (PCV-8400C) Position Switches	6 A Fuse	15 A Breaker
291	MOV-2SI-535 SA-1 (8808C) ANN & Position Switches	3 A Fuse	15 A Breaker
292	LOCAL FIS-1AR-7647A Fan S1 (1A-NNS) Flow Switch	6 A Fuse	15 A Breaker
293	LOCAL FS-7647B Fan S1 (1A-NNS) Flow Switch	6 A Fuse	15 A Breaker
294	Damper AR-D4-1 Limit Switch	6 A Fuse	15 A Breaker
295	Fire Detection Control Panel Fan S1 (1B-NNS)	6 A Fuse	15 A Breaker
296	Fuel Transfer Console Reactor Side 120/208 V Supply	20 A Breaker	20 A Breaker
297	Fire Detection Control Panel Fan S1 (1B-NSS)	20 A Breaker	20 A Breaker
298	Containment Fan Cooler AH-1 (1A-SB)	225 A Breaker	1600 A Breaker
299	Containment Fan Cooler AH-1 (1A-SB)	225 A Breaker	1600 A Breaker
300	Containment Fan Cooler AH-1 (1B-SB)	225 A Breaker	1600 A Breaker
301	Containment Fan Cooler AH-1 (1B-SB)	225 A Breaker	1600 A Breaker

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BASES

A.C. SOURCES, D.C. SOURCES, AMD ONSITE POWER DISTRIBUTION (Continued)

The OPERABILITY of the minimum specified A.C. and D.C. power sources and associated distribution systems during shutdown and refueling ensures that: (1) the facility can be maintained in the shutdown or refueling condition for extended time periods, and (2) sufficient instrumentation and control capability is available for monitoring and maintaining the unit status.

The Surveillance Requirements BASED UPON for demonstrating the OPERABILITY of the diesel generators are ~~in accordance with~~ the recommendations of Regulatory Guides 1.9, "Selection of Diesel Generator Set Capacity for Standby Power Supplies," December 1979; 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," Revision 1, August 1977 as modified in accordance with the guidance of IE Notice 85-32, April 22, 1985; and 1.137, "Fuel-Oil Systems for Standby Diesel Generators," Revision 1, October 1979. THE INCLUSION OF THE LOSS OF GENERATOR POTENTIAL TRANSFORMER CIRCUIT LOCKOUT TRIP IS A DESIGN FEATURE BASED UPON COINCIDENT LOGIC AND IS AN ANTICIPATORY TRIP PRIOR TO DIESEL GENERATOR OVERSPEED.
The Surveillance Requirement for demonstrating the OPERABILITY of the station batteries are based on the recommendations of Regulatory Guide 1.129, "Maintenance Testing and Replacement of Large Lead Storage Batteries for Nuclear Power Plants," February 1978, and IEEE Std 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

Verifying average electrolyte temperature above the minimum for which the battery was sized, total battery terminal voltage on float charge, connection resistance values, and the performance of battery service and discharge tests ensures the effectiveness of the charging system, the ability to handle high discharge rates, and compares the battery capacity at that time with the rated capacity.

Table 4.8-2 specifies the normal limits for each designated pilot cell and each connected cell for electrolyte level, float voltage, and specific gravity. The limits for the designated pilot cells float voltage and specific gravity, greater than 2.13 volts and 0.015 below the manufacturer's full charge specific gravity or a battery charger current that had stabilized at a low value, is characteristic of a charged cell with adequate capacity. The normal limits for each connected cell for float voltage and specific gravity, greater than 2.13 volts and not more than 0.020 below the manufacturer's full charge specific gravity with an average specific gravity of all the connected cells not more than 0.010 below the manufacturer's full charge specific gravity, ensures the OPERABILITY and capability of the battery.

Operation with a battery cell's parameter outside the normal limit but within the allowable value specified in Table 4.8-2 is permitted for up to 7 days. During this 7-day period: (1) the allowable values for electrolyte level ensures no physical damage to the plates with an adequate electron transfer capability; (2) the allowable value for the average specific gravity of all the cells, not more than 0.020 below the manufacturer's recommended full charge specific gravity, ensures that the decrease in rating will be less than the safety

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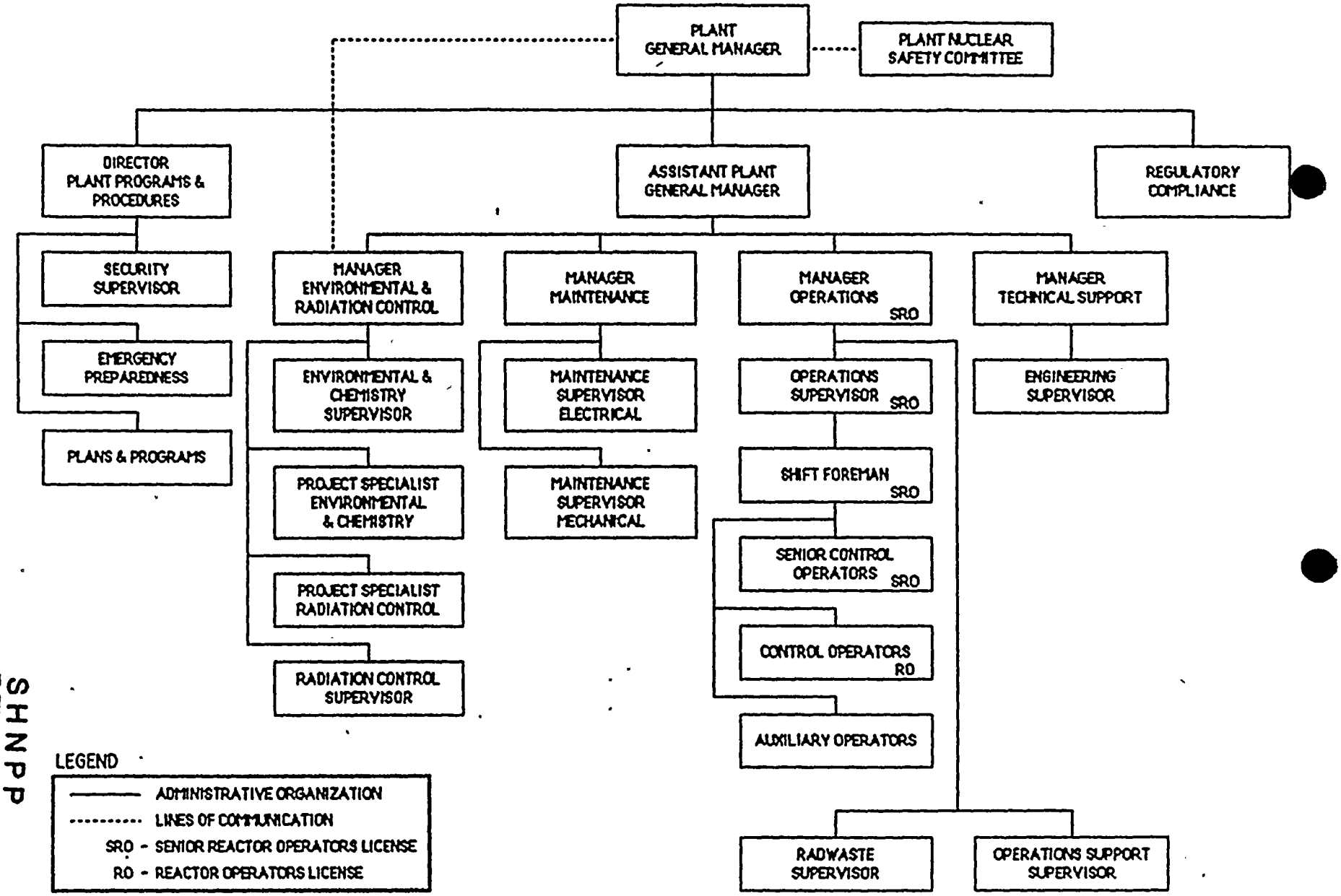

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