

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9605020258 DOC.DATE: 96/04/26 NOTARIZED: NO DOCKET #  
FACIL:50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400  
AUTH.NAME AUTHOR AFFILIATION  
ROBINSON,W.R. Carolina Power & Light Co. *2nd copy*  
RECIP.NAME RECIPIENT AFFILIATION  
Document Control Branch (Document Control Desk)

SUBJECT: Forwards Amend 47 to FSAR for SHNPP, incorporating addl engineering evaluations as indicated in 960412 submittal of Amend 46 to FSAR. Info in Amend 47 update completes amend scope as defined in 960412 submittal of Amend 46.

DISTRIBUTION CODE: A053D COPIES RECEIVED: LTR 1 ENCL 11 SIZE: 1+14  
TITLE: OR Submittal: Updated FSAR (50.71) and Amendments

NOTES: Application for permit renewal filed. 05000400

RECIPIENT ID CODE/NAME	COPIES LTR ENCL	RECIPIENT ID CODE/NAME	COPIES LTR ENCL
PD2-1 PD	1 0	LE,N	1 1
INTERNAL: ACRS	2 2	AEOD/DOA/IRB	1 1
<u>FILE CENTER 01</u>	2 2	RGN2	1 1
EXTERNAL: IHS	1 1	NOAC	1 1
NRC PDR	1 1		

NOTE TO ALL "RIDS" RECIPIENTS:  
PLEASE HELP US TO REDUCE WASTE! CONTACT THE DOCUMENT CONTROL DESK,  
ROOM OWFN 5D-5(EXT. 415-2083) TO ELIMINATE YOUR NAME FROM  
DISTRIBUTION LISTS FOR DOCUMENTS YOU DON'T NEED!

TOTAL NUMBER OF COPIES REQUIRED: LTR 11 ENCL 10

C  
A  
T  
E  
G  
O  
R  
Y  
1  
D  
O  
C  
U  
M  
E  
N  
T



Carolina Power & Light Company  
PO Box 165  
New Hill NC 27562

APR 26 1996

William R. Robinson  
Vice President  
Harris Nuclear Plant

SERIAL: HNP-96-076  
10 CFR 50.71(e)

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
FSAR Amendment No.47

- REFERENCES:
- 1) FSAR Amendment 46; dated April 12, 1996 (HNP-96-062) from Mr. W. R. Robinson to the NRC Document Control Desk.
  - 2) Report of Changes Pursuant to 10 CFR 59.59, dated April 12, 1996 (HNP-96-063) from Mr. W. R. Robinson to the NRC Document Control Desk.

Gentlemen:

On April 12, 1996 Carolina Power & Light Company submitted Amendment No. 46 to the Shearon Harris Nuclear Power Plant Final Safety Analysis Report (FSAR). The submittal indicated that three additional engineering evaluations would be incorporated and submitted by May 1, 1996. Amendment 47 to the FSAR, enclosed herein, provides these pages. These changes were included in the April 12, 1996 HNP 50.59 Summary Report (Reference 2).

In accordance with 10 CFR 50.71(e)(2), the information within this update completes the Amendment scope as defined in the April 12, 1996 submittal of Amendment 46. Per 10 CFR 50.4, enclosed are one original and ten copies.

Questions regarding this matter may be referred to Mr. T. D. Walt at (919) 362-2711.

Sincerely,

SDC/sdc

Enclosure

- c:
- Mr. J. B. Brady
  - Mr. S. D. Ebner
  - Mr. N. B. Le

02016d

9605020258 960426  
PDR ADOCK 05000400  
K PDR

AD53 1/11



Carolina Power & Light Company  
PO Box 165  
New Hill NC 27562

APR 26 1996

William R. Robinson  
Vice President  
Harris Nuclear Plant

SERIAL: HNP-96-076  
10 CFR 50.71(e)

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
FSAR Amendment No.47

REFERENCES: 1) FSAR Amendment 46; dated April 12, 1996 (HNP-96-062) from Mr. W. R. Robinson to the NRC Document Control Desk.  
2) Report of Changes Pursuant to 10 CFR 59.59, dated April 12, 1996 (HNP-96-063) from Mr. W. R. Robinson to the NRC Document Control Desk.

Gentlemen:

On April 12, 1996 Carolina Power & Light Company submitted Amendment No. 46 to the Shearon Harris Nuclear Power Plant Final Safety Analysis Report (FSAR). The submittal indicated that three additional engineering evaluations would be incorporated and submitted by May 1, 1996. Amendment 47 to the FSAR, enclosed herein, provides these pages. These changes were included in the April 12, 1996 HNP 50.59 Summary Report (Reference 2).

In accordance with 10 CFR 50.71(e)(2), the information within this update completes the Amendment scope as defined in the April 12, 1996 submittal of Amendment 46. Per 10 CFR 50.4, enclosed are one original and ten copies.

Questions regarding this matter may be referred to Mr. T. D. Walt at (919) 362-2711.

Sincerely,

SDC/sdc

Enclosure

c: Mr. J. B. Brady  
Mr. S. D. Ebnetter  
Mr. N. B. Le

SHNPP FSAR

CAROLINA POWER & LIGHT COMPANY  
SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400  
FINAL SAFETY ANALYSIS REPORT - AMENDMENT NO. 47  
INSTRUCTION SHEET

This amendment contains additional or revised technical information and editorial changes in the form of replacement pages for the SHNPP FSAR. Each revised page bears the notation "Amendment No. 47" at the page bottom. Vertical bars have been placed in the margins of revised pages to indicate the location of technical revisions on the page.

Since many SHNPP FSAR pages are printed double-sided, the replacement pages in this amendment may consist of original information on one side of the page and revised information on the other side. Reference to the amendment identification number in the lower right corner of the page will enable the user to determine the amendment status of the page.

The following page removals and insertions should be made to incorporate Amendment No. 47 into the FSAR.

REMOVE EXISTING PAGES

Effective Page List

EPL-93  
EPL-94  
EPL-96

Chapter 9

9.5.5-4

9.5A-25/9.5A-26  
9.5A-26a  
9.5A-27/9.5A-28  
9.5A-197/9.5A-198  
9.5A-201a/9.5A-202

INSERT REPLACEMENT PAGES

Effective Page List

EPL-93  
EPL-94  
EPL-96

Chapter 9

9.5.5-4

9.5A-25/9.5A-26  
9.5A-26a  
9.5A-27/9.5A-28  
9.5A-197/9.5A-198  
9.5A-201a/9.5A-202

SHNPP FSAR

<u>Page</u>	<u>Amendment</u>	<u>Page</u>	<u>Amendment</u>
9.5.1-85	25	9.5.7-1	17
9.5.1-86	25	9.5.7-2	17
9.5.1-87	25	9.5.7-3	40
		9.5.7-4	43
9.5.2-1	25	9.5.7-4a	36
9.5.2-2	25	9.5.7-5	5
9.5.2-3	46	9.5.7-6	2
9.5.2-4	46	9.5.7-7	5
9.5.2-5	46	9.5.7-8	27
9.5.2-6	46	9.5.7-9	5
9.5.2-7	46		
9.5.2-8	46	9.5.8-1	5
9.5.2-9	46	9.5.8-2	27
9.5.2-10	46	9.5.8-3	27
		9.5.8-4	17
9.5.3-1	0		
9.5.3-2	26	Fig. 9.5.1-1	46
9.5.3-3	17	Fig. 9.5.1-2	46
9.5.3-4	26	Fig. 9.5.1-3	45
9.5.3-5	26	Fig. 9.5.1-4	42
		Fig. 9.5.1-5	43
9.5.4-1	17		
9.5.4-2	27	Fig. 9.5.2-1	27
9.5.4-2a	25	Fig. 9.5.2-2	27
9.5.4-3	27	Fig. 9.5.2-3	27
9.5.4-4	17	Fig. 9.5.2-4	10
9.5.4-5	27	Deletion Sheet	
9.5.4-6	27	Fig. 9.5.2-5	27
9.5.4-6a	17	Fig. 9.5.2-6	27
9.5.4-6b	17		
9.5.4-6c	27	Fig. 9.5.3-1	17
9.5.4-6d	27	Fig. 9.5.3-2	17
9.5.4-6e	27		
9.5.4-6f	40	Fig. 9.5.4-1	43
9.5.4-7	15	Fig. 9.5.4-2	45
9.5.4-8	25		
9.5.4-9	27	Fig. 9.5.5-1	46
		Fig. 9.5.5-2	45
9.5.5-1	27		
9.5.5-2	37	Fig. 9.5.6-1	46
9.5.5-3	44		
9.5.5-3a	37	Fig. 9.5.7-1	45
9.5.5-3b	27		
9.5.5-4	47	Chapter 9.5A Tab	-
		Appendix 9.5A Title Page	0
9.5.6-1	0	9.5A-i	46
9.5.6-2	45	9.5A-ii	46
9.5.6-3	46	9.5A-iii	27
9.5.6-4	45	9.5A-iv	27
9.5.6-5	40		

SHNPP FSAR

<u>Page</u>	<u>Amendment</u>	<u>Page</u>	<u>Amendment</u>
9.5A-v	27	9.5A-42a	45
9.5A-vi	27	9.5A-43	45
		9.5A-44	40
9.5A-1	18	9.5A-45	22
9.5A-2	45	9.5A-46	46
9.5A-3	45	9.5A-47	46
9.5A-4	40	9.5A-48	40
9.5A-5	45	9.5A-48a	40
9.5A-6	45	9.5A-49	40
9.5A-7	40	9.5A-50	40
9.5A-8	27	9.5A-51	40
9.5A-9	27	9.5A-52	40
9.5A-10	45	9.5A-53	20
9.5A-11	45	9.5A-54	20
9.5A-12	45	9.5A-55	40
9.5A-13	45	9.5A-56	40
9.5A-14	40	9.5A-57	20
9.5A-15	40	9.5A-58	40
9.5A-16	40	9.5A-59	20
9.5A-17	40	9.5A-60	40
9.5A-18	40	9.5A-60a	40
9.5A-19	43	9.5A-61	40
9.5A-20	0	9.5A-62	40
9.5A-20a	43	9.5A-63	44
9.5A-21	46	9.5A-64	40
9.5A-22	46	9.5A-65	20
9.5A-23	46	9.5A-66	20
9.5A-24	46	9.5A-67	46
9.5A-25	47	9.5A-68	46
9.5A-26	47	9.5A-69	40
9.5A-26a	47	9.5A-70	27
9.5A-27	47	9.5A-71	27
9.5A-28	45	9.5A-72	45
9.5A-28a	45	9.5A-73	46
9.5A-29	45	9.5A-74	27
9.5A-30	45	9.5A-75	40
9.5A-30a	45	9.5A-76	27
9.5A-31	45	9.5A-77	45
9.5A-32	45	9.5A-78	45
9.5A-33	45	9.5A-79	40
9.5A-34	40	9.5A-80	27
9.5A-34a	40	9.5A-81	27
9.5A-35	40	9.5A-82	15
9.5A-36	40	9.5A-83	20
9.5A-36a	40	9.5A-83a	20
9.5A-37	27	9.5A-84	40
9.5A-38	27	9.5A-85	45
9.5A-39	45	9.5A-86	44
9.5A-40	45	9.5A-87	20
9.5A-40a	45	9.5A-88	0
9.5A-41	40	9.5A-89	0
9.5A-42	40	9.5A-90	46

SHNPP FSAR

<u>Page</u>	<u>Amendment</u>	<u>Page</u>	<u>Amendment</u>
9.5A-186	27	9.5A-220n	20
9.5A-187	20	9.5A-220o	20
9.5A-188	40	9.5A-220p	27
9.5A-189	27	9.5A-220q	20
9.5A-190	25	9.5A-221	46
9.5A-191	20	9.5A-222	45
9.5A-192	27	9.5A-223	45
9.5A-193	40	9.5A-223a	45
9.5A-194	27	9.5A-224	40
9.5A-195	27	9.5A-224a Deletion Sheet	40
9.5A-196	20	9.5A-225	45
9.5A-197	45	9.5A-226	20
9.5A-198	47	9.5A-226a	20
9.5A-199	45	9.5A-227	27
9.5A-200	45	9.5A-228	45
9.5A-200a	45	9.5A-229	20
9.5A-201	46	9.5A-230	27
9.5A-201a	47	9.5A-231	27
9.5A-202	45	9.5A-232	27
9.5A-203	45	9.5A-233	20
9.5A-204	45	9.5A-234	25
9.5A-205	45	9.5A-235	40
9.5A-206	45	9.5A-236	27
9.5A-207	45	9.5A-237	40
9.5A-207a	45		
9.5A-208	45	Fig. 9.5A-1	40
9.5A-209	45	Fig. 9.5A-2	42
9.5A-209a	45	Fig. 9.5A-3	42
9.5A-210	45	Fig. 9.5A-4	15
9.5A-211	18	Fig. 9.5A-5	15
9.5A-212	20	Fig. 9.5A-6	45
9.5A-213	45	Fig. 9.5A-7	45
9.5A-214	27	Fig. 9.5A-8	45
9.5A-215 Blank Sheet	20	Fig. 9.5A-9	42
9.5A-216	27	Fig. 9.5A-10	44
9.5A-217	40	Fig. 9.5A-11	42
9.5A-218	45	Fig. 9.5A-12	42
9.5A-219	45	Fig. 9.5A-13	42
9.5A-219a	45	Fig. 9.5A-14	44
9.5A-220	20	Fig. 9.5A-15	44
9.5A-220a	20	Fig. 9.5A-16 Deletion Sheet	27
9.5A-220b	20	Fig. 9.5A-17 Deletion Sheet	27
9.5A-220c	20	Fig. 9.5A-18	40
9.5A-220d	20	Fig. 9.5A-19	44
9.5A-220e	20	Fig. 9.5A-20	40
9.5A-220f	20	Fig. 9.5A-21	40
9.5A-220g	20	Fig. 9.5A-22	27
9.5A-220h	20	Fig. 9.5A-23	27
9.5A-220i	20	Fig. 9.5A-24	42
9.5A-220j	42	Fig. 9.5A-25 Deletion Sheet	27
9.5A-220k	20	Fig. 9.5A-26	45
9.5A-220l	20		
9.5A-220m	27		





SHNPP FSAR

TABLE 9.5.5-1

DESIGN PARAMETERS FOR DIESEL GENERATOR COOLING WATER SUBSYSTEM

Standpipe

Capacity, gal. 733

Engine Driven Jacket Water Pump

Flow, gpm 2000

Total dynamic head, ft. 70

Jacket Water Keep Warm Heater

Power, KW 75

Voltage, v 480 V AC

Jacket Water Cooler

Quantity 1

Shell

Tube

Flow, gpm 1550 800

Discharge pressure, psig 75 75

Temperature, Inlet, F 175 95

Temperature, Exit, F 152 128

Code ASME Section III  
TEMA Class R



SHNPP FSAR

APPENDIX 9.5A.3

1. Identification

Fire Area: 1-A-BAL

Building: Reactor Auxiliary

Fire Area: 1-A-BAL Reactor Auxiliary Building Balance  
Elevations 190, 216, 236, 261, and 286 ft.

Fire Zones: Detailed under Item 4

Shown on

Figures: 9.5A-6, 9.5A-7, 9.5A-8, 9.5A-9, 9.5A-11, 9.5A-12,  
9.5A-13 and 9.5A-26

Length (ft.): Variable      Width (ft.): Variable      Height (ft.): Variable

Area (Sq. ft.): 185,997      Volume (cu. ft.): 4,090,737

2. Occupancy - The area contains various safety and non-safety related equipment such as: pumps, tanks, filters, electrical equipment, heat exchangers, HVAC and associated controls, wiring in conduit and cable in trays.

3. Boundaries - Walls, floors, ceilings, and structural columns supporting the area boundaries are of reinforced concrete construction, with a minimum fire rating of three hours. Wall openings for personnel access are protected by certified three-hour A label type fire rated doors and by certified one-and-a-half-hour B label type fire rated doors at stair towers.

Floor, ceiling and roof openings for handling of equipment are protected by reinforced concrete hatch covers. Openings within fire area boundaries have a three hour fire rating. Concealed spaces consist of pipe tunnels, manholes, pipe chases, valve pits, valve galleries, sumps and inspection openings.

4. Combustible Loading

<u>Combustible</u>	<u>Quantity</u> <u>Gal./lb./RF</u>	<u>BTU in</u> <u>1000's</u>	<u>BTU</u> <u>Sq. Ft.</u>
Fire Area: 1-A-BAL, Reactor Auxiliary Building Balance			
Floor Area: 67,065 sq. ft.			
Cable Insulation			
Power	8698	1,202,662	17,933
Control	8352	2,594,041	38,679
Instrumentation	5854	1,658,122	24,724
Cables Not in Trays	1800	4,032	60

## SHNPP FSAR

<u>Combustible</u>	<u>Quantity Gal./lb./RF</u>	<u>BTU in 1000's</u>	<u>BTU/ Sq. Ft.</u>
Liquids: Grease (lb.)	1	20	1
Oil (gal.)	158	17,064	254
Hot Shop Items		8,593	128
Solids: Charcoal (lb.)	17,482	253,490	3,779
Plastic (lb.)	50	578	9
Permanent Non-Fixed:	Various	1,486,609	22,167
Transient: Fiber Drums (lb.)	987	7,896	118
Charcoal (lb.)	17,218	249,662	3,723
Grease (lb.)	35	700	10
Oil (gal.)	550	59,400	886
Misc.		190	3
Total		<u>7,543,059</u>	<u>112,474</u>

The following is a listing of Fire Zones within Fire Area 1-A-BAL which have negligible combustible loadings:

- 1-A-1-FD, Floor Drain Transfer Tank, Elevation 190 ft.
- 1-A-2-PT, Pipe Tunnel, Elevation 216 ft.
- 1-A-3-TA, Tank Area, Elevation 236 ft.
- 1-A-34-RHXB Residual Heat Removal Heat Exchanger 1B, Elevation 236 and Elevation 261 ft.
- 1-A-4-TA, Tank Area, Elevation 261 ft.
- 1-A-46-ST, Steam Feedwater Tunnel, Elevation 261 ft. through 305 ft.
- 1-A-5-BATN, Battery Room Neutral, Elevation 286
- 1-A-5-CEH, Cont. Equipment Hatch Area, Elevation 286 ft.
- 1-A-5-COMA, Col. 43 to 45, B to FW, Elevation 286 ft.
- 1-A-5-HV3, HVAC Equipment, Elevation 286 ft.

There is a small amount of Standard Products Quickedge Minitrim distributed throughout this area which provides a negligible fire loading.

SHNPP FSAR

<u>Combustible</u>	<u>Quantity</u> <u>Gal./lb./RF</u>	<u>BTU in</u> <u>1000's</u>	<u>BTU/</u> <u>Sq. Ft.</u>
--------------------	---------------------------------------	--------------------------------	-------------------------------

Fire Zone: 1-A-1-ED, Equipment Drain Transfer Tank, Elevation 190 ft.  
 Floor Area: 475 sq. ft.

Cable Insulation:			
Power	0	0	0
Control	0	0	0
Instrumentation	0	0	0
Liquids:	0	0	0
Solids:	0	0	0
Permanent Non-Fixed: (cu. ft)	15	2,156	4,539
Transient:	0	<u>0</u>	<u>0</u>
Total		<u>2,156</u>	<u>4,539</u>

Fire Zone: 1-A-1-PA, Residual Heat Removal Pump Room A, Elevation 190 ft.  
 Floor Area: 2,930 sq. ft.

Cable Insulation:			
Power	174	16,350	5,581
Control	22	7,363	2,513
Instrumentation	22	6,713	2,290
Cables Not in Trays	900	2,016	688
Liquids: oil (gal.)	60	6,480	2,212
Solids:	0	0	0
Permanent Non-Fixed:	15	2,156	736
Transient: Grease (lb.)	5	<u>100</u>	<u>34</u>
Total		<u>41,178</u>	<u>14,054</u>

## SHNPP FSAR

<u>Combustible</u>	<u>Quantity Gal./lb./RF</u>	<u>BTU in 1000's</u>	<u>BTU/ Sq. Ft.</u>
--------------------	---------------------------------	--------------------------	-------------------------

Fire Zone: 1-A-1-PB, Residual Heat Removal Pump Room 1B, Elevation 190 ft.  
Floor Area: 2,930 sq. ft.

## Cable Insulation:

Power	109	11,475	3,917
Control	87	18,240	6,225
Instrumentation	22	6,713	2,991
Cables Not in Trays	900	2,016	688

Liquids: oil (gal.)	60	6,500	2,212
---------------------	----	-------	-------

Solids:	0	0	0
---------	---	---	---

Permanent Non-Fixed (cu. ft.)	15	2,156	736
-------------------------------	----	-------	-----

Transient: Grease (lb.)	5	<u>100</u>	<u>34</u>
Total		47,180	16,103

Fire Zone: 1-A-2-MP, Miscellaneous Equipment and Pumps, Elevation 216 ft.  
Floor Area: 8,742 sq. ft.

## Cable Insulation:

Power	134	20,100	2,299
Control	104	34,808	3,982
Instrumentation	30	9,155	1,047

Liquids (negligible, integral with equipment)	0	0	0
--------------------------------------------------	---	---	---

Solids (Plastic)	5	57	7
------------------	---	----	---

Permanent Non-Fixed: (cu. ft.)	12	1,764	202
--------------------------------	----	-------	-----

Transient: Grease (lb.)	5	<u>100</u>	<u>11</u>
Total		65,984	7,548

Fire Zone: 1-A-3-COMB, Columns 41 to 43 and B to E, Elevation 236 ft.  
Floor Area: 4,400 sq. ft.

## Cable Insulation:

Power	380	57,000	12,955
Control	410	113,794	25,863
Instrumentation	410	103,753	23,580

Liquids: grease (lb.)	1	20	5
-----------------------	---	----	---

Solids:	0	0	0
---------	---	---	---

Permanent Non-Fixed: (lb.)	704	14,784	3,360
----------------------------	-----	--------	-------

Transient: oil (gal.)	5	<u>5,940</u>	<u>1,350</u>
Total		295,291	67,133

SHNPP FSAR

<u>Combustible</u>	<u>Quantity Gal./lb./RF</u>	<u>BTU in 1000's</u>	<u>BTU/ Sq. Ft.</u>
Fire Zone: 1-A-3-COMC, Hot Shop Area Columns 43 to 45 and Ap to H, Elevation 236 ft. Floor Area: 12,966 sq. ft.			
Cable Insulation:			
Power	0	0	0
Control	146	47,906	3,695
Instrumentation	146	44,457	3,429
Liquids: (oil 1 gal.) (grease 1 lb.)		128	10
Solids: (PVC coated ceiling tiles) (Plastic)	4	8,465 47	653 4
Permanent Non-Fixed: (lb.) (gal.)	10,008 120	231,360	17,844
Transient: (Poly bags 75 lb.) (Cloth wipes 5 lb.)		190	15
	Total	332,553	25,650

Fire Zone: 1-A-3-COME, Columns 41 to 43 and E to H, Elevation 236 ft.  
Floor Area: 5,170 sq. ft.

Cable Insulation:			
Power	340	51,000	9,865
Control	340	113,794	22,010
Instrumentation	340	103,753	20,068
Liquids: (negligible)	0	0	0
Solids: (Plastic)	4	47	9
Permanent Non-Fixed: (cu. ft.)	68	9,996	1,933
Transient: Oil (gal.)	55	5,940	1,149
	Total	284,530	55,034

Fire Zone 1-A-3-COMI, Columns 41 to 43 and I to L, Elevation 236 ft.  
Floor Area: 11,600 sq. ft.

Cable Insulation:			
Power	601	86,775	7,481
Contro	208	69,615	6,001
Instrumentation	501	152,883	13,180
Liquids: grease (lb.)	0	0	0
Solids:	0	0	0
Permanent Non-Fixed (cu. ft.)	29	4,312	372
Transient: Oil (gal.)	55	5,940	512
	Total	319,525	27,546

APPENDIX 9.5A.221. Identification.

Fire Areas: 5-W-BAL

Building: Waste Processing

Fire Areas: 5-W-BAL

Fire Zones: Detailed in Item 4

Shown on Figure: 9.5A-6, 9.5A-8, 9.5A-12, 9.5A-14, 9.5A-18, 9.5A-24  
through -33.

Length (ft.): Variable Width (ft.): Variable

Height (ft.): Variable Area (sq. ft.): 233,662

Volume (cu. ft.): 3,532,969

2. Occupancy. The area contains various tanks, pumps, compressors, evaporators, laboratories, drumming areas, health physics facilities, offices, laundries, locker rooms, decontamination areas, computer room, HVAC equipment, demineralizers, miscellaneous equipment, associated controls, wiring in conduit and cable in trays.

3. Boundaries. Walls, floor, roof and structural columns supporting the area boundaries are of reinforced concrete construction with a fire rating of three hours. Wall openings for personnel access are protected by certified three hour A Label type fire rated doors. Certified one and a half hour B Label type fire rated doors are provided at stair towers. Floor and roof openings for handling of equipment are protected either by metal or reinforced concrete covers.

Concealed spaces consists of suspended ceilings and are constructed of noncombustible materials. Other concealed spaces consist of valve galleries, pipe tunnels and pipe chases.

4. Combustible Loading.

<u>Combustible</u>	<u>Quantity</u> <u>Gal./lb./RF</u>	<u>BTU in</u> <u>1000's</u>	<u>BTU/</u> <u>Sq. Ft.</u>
--------------------	---------------------------------------	--------------------------------	-------------------------------

Fire Area: 5-W-BAL, Waste Processing Building  
Area: 73,394 sq. ft.

Cable Insulation:

Power	10,415	1,520,066	20,711
-------	--------	-----------	--------



## SHNPP FSAR

<u>Combustible</u>	<u>Quantity Gal./lb./RF</u>	<u>BTU in 1000's</u>	<u>BTU/ Sq. Ft.</u>
Control	14,057	3,851,630	52,479
Instrumentation	8,955	2,037,288	27,758
Liquids: Oil (gal.)	5,124	622,738	8,485
Solids: Charcoal (lb.)	56,352	817,104	11,133
Plastic (lb.)	2	22	0
Gases: Hydrogen (scf)	232	75	1
Permanent Non-Fixed	Various	11,223,892	152,927
Transients:			
Charcoal (lb.)	14,088	204,276	2,783
Oil (gal.)	55	5,940	81
Fiber drums (lb.)	799	6,392	87
TOTAL		20,289,423	276,445

There is a small amount of Standard Products Quickedge Minitrim distributed throughout this area which provides a negligible fire loading.

Fire Zone: 5-W-1-WHTK1, Waste Holdup Tank, Elevation 211 ft.  
Floor Area: 7,020 sq. ft.

Cable Insulation:			
Power	560	67,875	9,669
Control	910	189,338	26,971
Instrumentation	470	86,607	12,337
Liquids: (integral with equipment)	0	0	0
Solids:	0	0	0
Gases: Hydrogen (scf)	232	75	11
Permanent Non-Fixed: (cu. ft.)	173	25,480	3,630
Transient: Oil (gal.)	55	5,940	846
TOTAL		375,315	53,464

Fire Zone: 5-W-1-FDTK, Floor Drain Tanks, WPB Elevation 211 ft.  
Floor Area: 10,440 sq. ft.

Cable Insulation:			
Power	375	56,250	5,388
Control	220	56,100	5,374
Instrumentation	220	51,150	4,899
Liquids: (integral with equipment)	0	0	0
Solids:	0	0	0
Permanent Non-Fixed: (cu. ft.)	173	25,480	2,441
Transient: Oil (gal.)	0	0	0
TOTAL		188,980	18,102

SHNPP FSAR

<u>Combustible</u>	<u>Quantity</u> <u>Gal./lb./RF</u>	<u>BTU in</u> <u>1000's</u>	<u>BTU/</u> <u>sq. ft.</u>
Fire Zone: 5-W-2-EVAP, Waste Evaporator, Elevation 236 ft.			
Floor Area: 5,760 sq. ft.			
Cable Insulation:			
Power	305	54,938	9,538
Control	525	163,519	28,388
Instrumentation	400	112,472	19,527
Liquids: (negligible)	0	0	0
Solids:	0	0	0
Permanent Non-Fixed: (cu. ft.)	303		
(lbs.)	1,257		
(gal.)	2,310		
(total)		350,440	60,840
Transient: Oil (gal.)	0	<u>0</u>	<u>0</u>
TOTAL		681,369	118,293

## SHNPP FSAR

<u>Combustible</u>	<u>Quantity Gal./lb./RF</u>	<u>BTU in 1000's</u>	<u>BTU/ sq. ft.</u>
--------------------	---------------------------------	--------------------------	-------------------------

Fire Zone: 5-W-2-HVAC, HVAC Equipment, Elevation 236 ft.  
Floor Area: 5,760 sq. ft.

Cable Insulation:			
Power	290	52,313	9,082
Control	560	174,994	30,381
Instrumentation	440	124,679	21,645
Liquid: (minor, integral with equipment)	0	0	0
Solids: Plastic (lb.)	8	96	17
Permanent Non-Fixed: (cu. ft.)	159	23,324	4,049
Transient: Oil (gal)	0	<u>0</u>	<u>0</u>
TOTAL		375,406	65,174

Fire Zone: 5-W-2-RPIR, Relay and Process Instrument Room, Elevation 236 ft.  
Floor Area: 1,728 sq. ft.

Cable Insulation:			
Power	0	0	0
Control	930	296,438	171,549
Instrumentation	330	95,906	55,501
Liquids:	0	0	0
Solids:		0	00
Permanent Non-Fixed: (cu. ft.)	169		
(lbs.)	20		
(total)		71,254	41,235
Transient:	0	<u>0</u>	<u>0</u>
TOTAL		463,598	268,286

Fire Zone: 5-W-2-TLHSTK, Treated Laundry and Hot Shower, Tanks,  
Elevation: 236 ft.  
Floor Area: 5760 sq. ft.

Cable Insulation:			
Power	250	40,313	6,998
Control	337	95,498	16,580
Instrumentation	230	57,835	10,041
Liquids: (negligible)	0	0	0
Solids:	0	0	0
Permanent Non-Fixed: (lbs.)	600		
(cu. ft.)	188		
(gals.)	165		
(total)		58,056	10,079
Transient: Oil (gal.)	0	<u>0</u>	<u>0</u>
TOTAL		251,702	43,698