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MPH

ACCESSION NBR: 8310120180 DOC. DATE: 83/10/05 NOTARIZED: NO DOCKET #
 FACIL: 50-400 Shearon Harris Nuclear Power Plant, Unit 1, Carolina 05000400
 50-401 Shearon Harris Nuclear Power Plant, Unit 2, Carolina 05000401
 AUTH. NAME AUTHOR AFFILIATION
 MCDUFFIE, M.A. Carolina Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION
 DENTON, H.R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards response to request for addl info re draft SER open items re reevaluation of PMP, plant area water accumulation & adequacy of electric distribution sys voltages.

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1948	B	200	1951	B	200
1949	C	300	1952	C	300
1950	D	400	1953	D	400
1951	E	500	1954	E	500
1952	F	600	1955	F	600
1953	G	700	1956	G	700
1954	H	800	1957	H	800
1955	I	900	1958	I	900
1956	J	1000	1959	J	1000
1957	K	1100	1960	K	1100
1958	L	1200	1961	L	1200
1959	M	1300	1962	M	1300
1960	N	1400	1963	N	1400
1961	O	1500	1964	O	1500
1962	P	1600	1965	P	1600
1963	Q	1700	1966	Q	1700
1964	R	1800	1967	R	1800
1965	S	1900	1968	S	1900
1966	T	2000	1969	T	2000
1967	U	2100	1970	U	2100
1968	V	2200	1971	V	2200
1969	W	2300	1972	W	2300
1970	X	2400	1973	X	2400
1971	Y	2500	1974	Y	2500
1972	Z	2600	1975	Z	2600
1973	AA	2700	1976	AA	2700
1974	AB	2800	1977	AB	2800
1975	AC	2900	1978	AC	2900
1976	AD	3000	1979	AD	3000
1977	AE	3100	1980	AE	3100
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1988	AP	4200	1991	AP	4200
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1990	AR	4400	1993	AR	4400
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1993	AU	4700	1996	AU	4700
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1995	AW	4900	1998	AW	4900
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1997	AY	5100	2000	AY	5100
1998	AZ	5200	2001	AZ	5200
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2000	BB	5400	2003	BB	5400
2001	BC	5500	2004	BC	5500
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2003	BE	5700	2006	BE	5700
2004	BF	5800	2007	BF	5800
2005	BG	5900	2008	BG	5900
2006	BH	6000	2009	BH	6000
2007	BI	6100	2010	BI	6100
2008	BJ	6200	2011	BJ	6200
2009	BK	6300	2012	BK	6300
2010	BL	6400	2013	BL	6400
2011	BM	6500	2014	BM	6500
2012	BN	6600	2015	BN	6600
2013	BO	6700	2016	BO	6700
2014	BP	6800	2017	BP	6800
2015	BQ	6900	2018	BQ	6900
2016	BR	7000	2019	BR	7000
2017	BS	7100	2020	BS	7100
2018	BT	7200	2021	BT	7200
2019	BV	7300	2022	BV	7300
2020	BW	7400	2023	BW	7400
2021	BX	7500	2024	BX	7500
2022	BY	7600	2025	BY	7600



Carolina Power & Light Company

SERIAL: LAP-83-458

OCT 05 1983

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 AND 2
DOCKET NOS. 50-400 AND 50-401
RESPONSES TO REQUESTS FOR ADDITIONAL INFORMATION

Dear Mr. Denton:

Carolina Power & Light Company hereby transmits one original and forty copies of additional information requested by the NRC as part of the safety review of the Shearon Harris Nuclear Power Plant. The enclosed responses relate to Draft Safety Evaluation Report Open Items. The cover sheet of the attachment summarizes the related Open Items addressed in the attachment along with the corresponding review branch and reviewer for each response.

We will be providing responses to other requests for additional information shortly.

Yours very truly,

M. A. McDuffie
Senior Vice President
Nuclear Generation

FXT/tda (8055FXT)
Enclosure

cc: Mr. B. C. Buckley (NRC)
Mr. G. F. Maxwell (NRC-SHNPP)
Mr. J. P. O'Reilly (NRC-RII)
Mr. Travis Payne (KUDZU)
Mr. Daniel F. Read (CHANGE/ELP)
Mr. R. P. Gruber (NCUC)
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Mr. Wells Eddleman
Dr. Phyllis Lotchin
Mr. John D. Runkle
Dr. Richard D. Wilson
Mr. G. O. Bright (ASLB)
Dr. J. H. Carpenter (ASLB)
Mr. J. L. Kelley (ASLB)

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LIST OF OPEN ITEMS/SAFETY REVIEW QUESTIONS, REVIEW BRANCH AND REVIEWER

Environmental and Hydrologic Engineering Branch/R. Gonzales
Open Item 11

Power System Branch/O. Chopra
Open Item 307

Quality Assurance Branch/R. Kirkwood
Open Item 220

(8055FXIt da)

Shearon Harris Nuclear Power Plant
Draft SER Open Item 11
Supplemental Information

The staff requires that the applicant submit a grading plan to show that there are no obstructions such as raised road beds or earth berms under security fences that could result in more than one foot of ponding on the plant island.

Note: This response has been revised per discussions with the NRC Staff.

Response

The local Probable Maximum Precipitation (PMP) has been reevaluated based on the following references:

"Probable Maximum Precipitation Estimates, United States East of the 105th Meridian," Hydrometeorological Report No. 51, NOAA & Corps of Engineers, June 1978.

"Application of Probable Maximum Precipitation Estimates - United States East of the 105th Meridian," Hydrometeorological Report No. 52, (U.S.) National Weather Service, August 1982.

As a result of this reevaluation, the maximum depth of accumulation of rain water on the site is 13.8 inches.

FSAR Table 2.4.2-4 will be revised to incorporate the new data.

The maximum elevation to which water will pond on the plant site during a PMP event assuming the entire drainage system became blocked would be 261.27 ft. However, this will not impact on the plant's ability to safely shutdown, if necessary.

All safety related structures which have entrances at elevation 261 ft. are protected against any ponding during a Probable Maximum Precipitation (PMP) event by the following features:

- a) Artificial barriers such as watertight or airtight doors.
- b) Low structural barriers (i.e., curbs). The minimum curb elevation is 262.0 ft.

The only exceptions to the above are two entrances to the Waste Processing Building which are not protected against any ponding above El. 261.06 ft. However, these entrances provide access to areas which house locker rooms, and shower stalls and do not house any safety related equipment.



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(Cont'd OI 11)

The elevation of the railroad in the plant area is 261.0 ft. (top of the rails) which is equivalent to the plant roads. Therefore, the above analysis includes the effects of ponding caused by the railroad tracks.

Section 2.4 of the FSAR will be revised in a future amendment to reflect the above information.

The elevation of the plant security fencing is the same as plant grade. Concrete footing for the fence posts should be at or slightly below grade.

TABLE 2.4.2-4

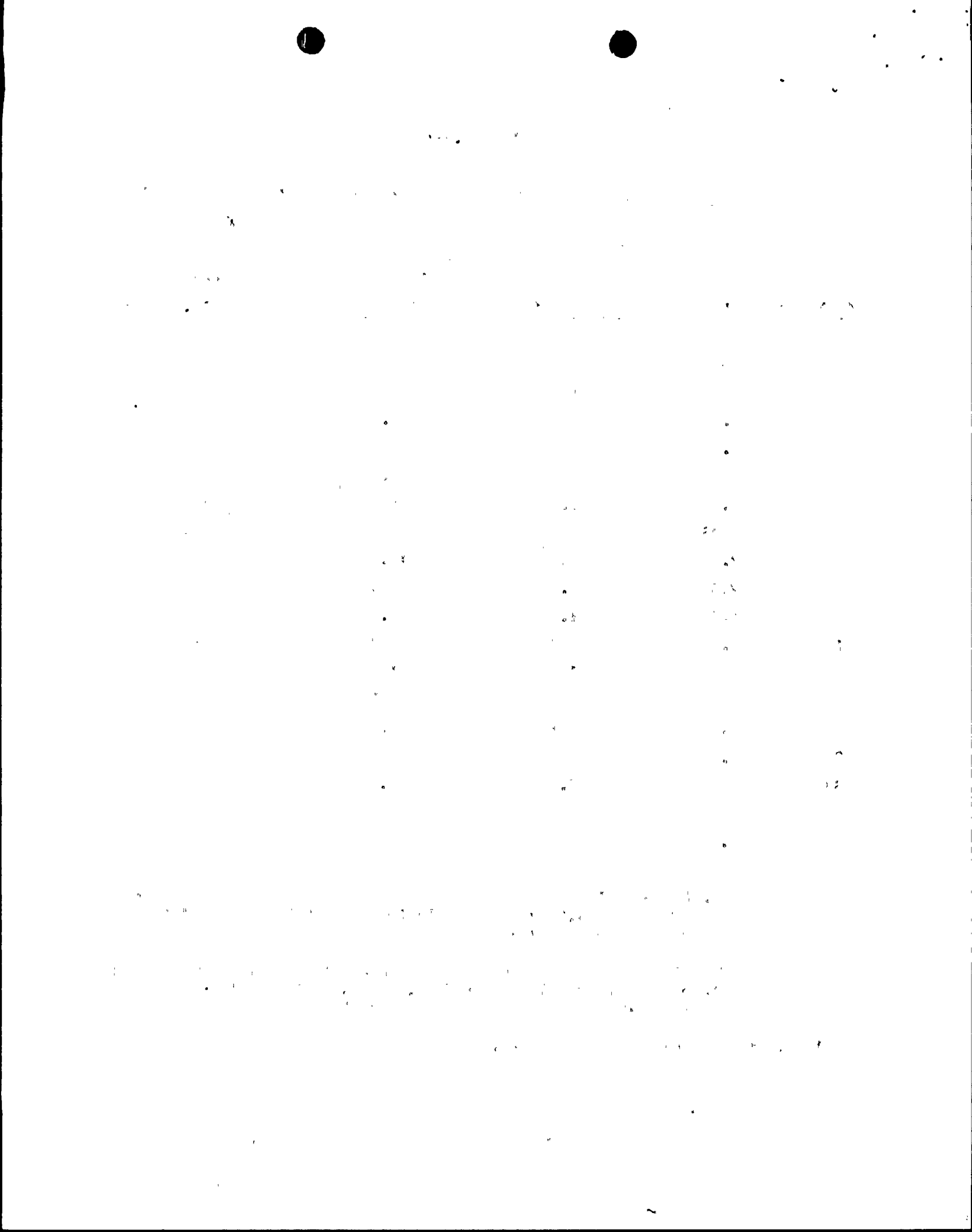
PLANT AREA WATER ACCUMULATION FOR DESIGN PMP COMDITIONS*

<u>Time</u> <u>(HR)</u>	<u>Incremental</u> <u>Rainfall (in.)</u>	<u>Incremental Plus</u> <u>Accumulated</u> <u>Rainfall (in.)</u>	<u>Utilized Plant</u> <u>Drainage (in.)</u>	<u>Net Accumulated</u> <u>Water (in.)</u> <u>Depth</u>
0	-	-	-	-
1	1.5	1.5	1.5	0
2	2.1	2.1	2.1	0
3	2.3	2.3	2.3	0
4	18.8	18.8	5.0	13.8
5	4.0	17.8	5.0	12.8
6	1.25	14.03	5.0	9.05
9	2.95	12.0	12.0	0
12	2.5	2.5	2.5	0
15	1.7	1.7	1.7	0
18	1.2	1.2	1.2	0
21	1.1	1.1	1.1	0
24	0.7	0.7	0.7	0
27	0.7	0.7	0.7	0
30	0.6	0.6	0.6	0
33	0.6	0.6	0.6	0
36	<u>0.6</u>	0.6	0.6	0
	42.6			

References: "Probable Maximum Precipitation Estimates, United States East of the 105 Meridian," Hydrometeorological Report No. 51, NOAA & Corps of Engineers, June 1978.

"Application of Probable Maximum Precipitation Estimates - United States East of the 105th Meridian," (U.S.) National Weather Service & Corps of Engineers, August 1982.

* 1 sq. mi. (or point) PMP intensity.



Shearon Harris Nuclear Power Plant
Draft SER Open Item 307
Supplemental Information

Describe in detail, how the Shearon Harris design meets BTP PSB-1 "Adequacy of Station Electric Distribution System Voltages."

The response to position 4 of BTP PSB-1 was inadvertently left out of Carolina Power & Light Company's previous response to this item dated August 12, 1983. Additional information, in response to other questions by the Reviewer on this item, will be supplied in a future transmittal.

Response

Position 4

Actual field testing will be conducted prior to initial full power operation to verify the accuracy of the auxiliary system analysis results. Attached is a copy of the "AC Distribution System Minimum Operating Voltage Test Summary," which will be incorporated in a future FSAR Amendment. The guidance provided in BTP PSB-1 for correlation of the analytical results and the test results will be utilized.

(8044NECtda)



[The text in this section is extremely faint and illegible due to low contrast and scan quality. It appears to be several lines of a document.]

AC Distribution System Minimum Operating Voltage Test Summary

a) Test Objectives

- 1) The results of this test will be used to validate the analytical techniques and assumptions used in the analysis for "Adequacy of Station Electric Distribution System Voltages" performed by Ebasco to demonstrate compliance with Branch Technical Position PSB-1.

b) Prerequisites

- 1) The general prerequisites are met.
- 2) Sufficient unit auxiliary loads are operable with which to load the AC distribution system.

c) Test Method

- 1) Load the required AC distribution buses to 30% or more of each bus' normal continuous loading and measure/record the steady state voltage and loading.
- 2) With the required AC distribution buses loaded to 30% or more, install recorders on the string of buses that were analyzed by the AE to have the lowest voltage. Separately start a large Class 1E motor and a large non-Class 1E motor and record the voltages and loadings of the resulting transients.
- 3) Transmit the bus voltage and loading data taken in steps 1 and 2 above to the AE for evaluation and validation of the AE's analytical techniques and assumptions used in the bus loading analysis program.

d) Acceptance Criteria

- 1) None.

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Shearon Harris Nuclear Power Plant
Draft SER Open Item 220(A)
Supplemental Information

As a result of a telephone conversation on September 14, 1983 between the NRC (R. Kirkwood) and Carolina Power & Light Company (CP&L) the following is submitted to complete the CP&L response to Open Item 220:

Response

All ASME, Section III, Division 1, Class 1, 2, and 3 pressure retaining components are in compliance with all aspects of subsection NA including NA-5000, ASME boiler and pressure vessel code.

(8036NEccc)

