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 50-401 Shearon Harris Nuclear Power Plant, Unit 2, Carolina 05000401
 50-402 Shearon Harris Nuclear Power Plant, Unit 3, Carolina 05000402

AUTH. NAME AUTHOR AFFILIATION
 MCDUFFIE, M.A. Carolina Power & Light Co.
 RECIPIENT NAME RECIPIENT AFFILIATION
 DENTON, H.R. Office of Nuclear Reactor Regulation

SUBJECT: Forwards Design Change Notification 500-347 to Ebasco Spec
 CAR-SH-CH4, "Embankments, Dams, Dikes & Channels," which
 changes requirement to control moisture content of
 impervious core matl for west auxiliary dam above 225 ft.

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	09 GEOSCIEN BR	4	4	10 QAB	1	1
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	13 MATL ENG BR	2	2	15 REAC SYS BR	1	1
	16 ANALYSIS BR	1	1	17 CORE PERF BR	1	1
	18 AUX SYS BR	1	1	19 CONTAIN SYS	1	1
	20 I & C SYS BR	1	1	21 POWER SYS BR	1	1
	22 AD SITE TECH	1	0	26 ACCDNT ANLYS	1	1
	27 EFFL TRT SYS	1	1	28 RAD ASMT BR	1	1
	29 KIRKWOOD	1	1	AD FOR ENG	1	0
	AD PLANT SYS	1	0	AD REAC SAFETY	1	0
	AD SITE ANLYSIS	1	0	DIRECTOR NRR	1	0
	HYDRO-METEOR BR	2	2	MPA	1	0
	OELD	1	0			
EXTERNAL:	03 LPDR	1	1	04 NSIC	1	1
	30 ACRS	10	10			

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Carolina Power & Light Company

September 25, 1979

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

SHEARON HARRIS NUCLEAR POWER PLANT UNIT NOS. 1, 2, 3 AND 4
DOCKET NOS. 50-400, 50-401, 50-402 AND 50-403
MOISTURE CONTROL OF WEST AUXILIARY DAM IMPERVIOUS CORE MATERIAL

Dear Mr. Denton:

Attached is DCN 500-347 to Ebasco Specification CAR-SH-CH4 "Embankments, Dams, Dikes, and Channels" which changes the requirement to control moisture content of the impervious core material for the west auxiliary dam above elevation 225 feet to within -1% and +3% of optimum moisture. CAR-SH-CH4 currently requires moisture content to be controlled with +2% of optimum moisture.

The contents of this DCN have been discussed with members of your staff. It is requested that you review and formally approve this change in order to allow construction of the west auxiliary dam to proceed.

Yours very truly,

M. A. McDuffie
Senior Vice President
Engineering & Construction

MAM/jcb

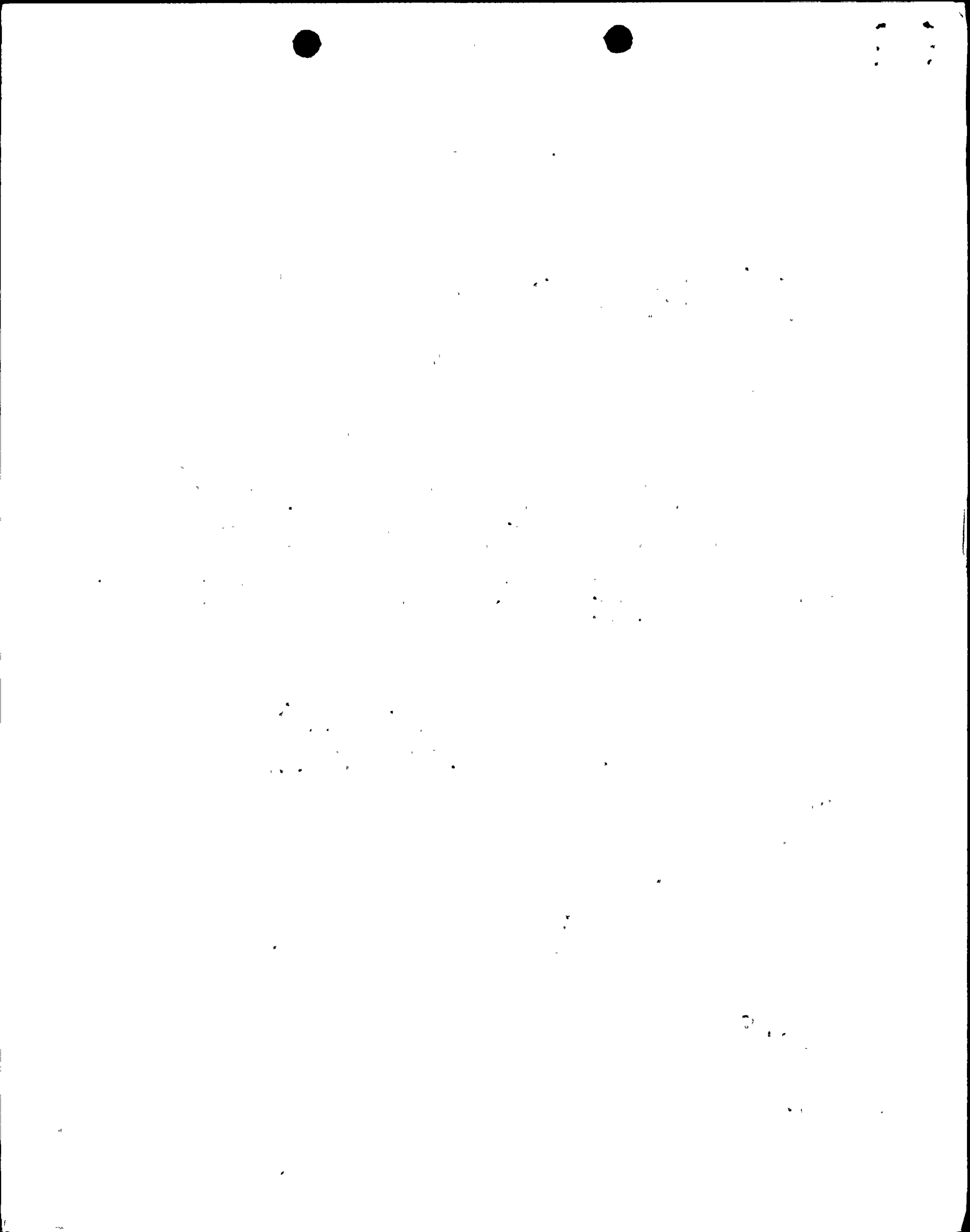
Attachment

cc: James P. O'Reilly

7910010277

411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

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DESIGN CHANGE NOTIFICATION

PROJECT SHEARON HARRIS NUCLEAR POWER PLANT OFS NO. CAR 6418.260 DESIGN CHANGE NO. DCN-550-347

To R. M. PARSONS CP&L SITE MANAGER Dept CPL CONSTRUCTION Location SITE Date 8-28-77

Re: Drawing Nos CAR 2167-G 6271, 6272, 6273 Title WEST AUXILIARY DAM SECTIONS
Other drawings/other Unit drawings affected: No Yes - If yes give No(s) and title(s)

Specification No. CAR-SH-CH4 (REV 8) Page 13 Paragraph 10.5
 Other PSAR SECTION 2.6.2.2

AREA OF CHANGE: Major Change Minor Change
 Hold Construction Activities in area defined herein pending receipt of formally revised document(s) and/or revised DCN. AND APPROVED PSAR CHANGE NOTICE
Proceed with Construction on basis of modification(s) prescribed by this DCN.
ANTICIPATED REVISION DATE OF FORMAL DOCUMENTS: ASAP

PROPOSED CHANGE:

DESCRIPTION	REASON FOR CHANGE
MOISTURE CONTROL FOR WEST AUXILIARY DAM IMPERVIOUS CORE MATERIAL	<input type="checkbox"/> Field Change Request (FCR No. _____) <input type="checkbox"/> Required modifications to design or specification <input type="checkbox"/> Disposition of nonconforming items <input type="checkbox"/> Changes in regulatory or other requirements <input checked="" type="checkbox"/> Operational experience <input type="checkbox"/> Other _____

EXHIBITS ATTACHED: No Yes - if Yes, Check Those Applicable
 Copies of marked-up area of drawing(s)
 Field Change Request (FCR No. _____)
 Out-of-Scope Form 618
 Other (Describe) MARKED-UP COPY OF CH4 SPECIFICATION

COMMENTS: THIS DCN CANCELS DCN 550-249. THE NOTES ON DRAWING G 6271, 6272 AND 6273 WILL BE REVISED TO REQUIRE THE IMPERVIOUS CORE MATERIAL ABOVE EL 225 TO BE COMPACTED TO 97% STANDARD PROCTOR DENSITY AT A MOISTURE CONTENT WITHIN -1% AND +3% OF OPTIMUM MOISTURE. PSAR CHANGE APPROVAL REQUIRED. DATE 8-28-77

DISTRIBUTION (Check as applicable and fill in name. Indicate with an asterisk (*) personnel who are to perform a QA review)

- | | | |
|--|--|--|
| <input type="checkbox"/> M-N Engr _____ | <input type="checkbox"/> Design _____ | <input checked="" type="checkbox"/> Project Mgr L. THIRWISCHIE |
| <input checked="" type="checkbox"/> Civil Engr E. MERZ | <input checked="" type="checkbox"/> Design D. TURNER | <input checked="" type="checkbox"/> Project Engr M. K. YATES |
| <input type="checkbox"/> Elec Engr _____ | <input type="checkbox"/> Design _____ | <input checked="" type="checkbox"/> Coordinator S. JOSEPH |
| <input type="checkbox"/> HVAC Engr _____ | <input type="checkbox"/> Design _____ | <input checked="" type="checkbox"/> Orig Disc Supvr M. WEBER |
| <input type="checkbox"/> Plumbing Engr _____ | <input type="checkbox"/> Design _____ | <input type="checkbox"/> Nuc Safety _____ |
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| <input type="checkbox"/> _____ | <input type="checkbox"/> RW Engr _____ | <input type="checkbox"/> Vendor QA _____ |
| <input type="checkbox"/> ADDRESS _____ | <input type="checkbox"/> Model Shop _____ | <input checked="" type="checkbox"/> E. BORELLA |
| | | <input checked="" type="checkbox"/> M. PAVONE |

NOTE: Personnel indicated with an asterisk (*) are to perform a QA review and inform Originator of any comments or approval and sign as applicable by _____ (date)

LEAD DISCIPLINE ENGR (Signature) E. Merz	DATE 8/28/77	PROJECT ENGR APPROVAL M. Weber	DATE 8/27/77
QA REVIEWER (If indicated above) E. Merz	DATE 8/28/77	SUPERVISING ENGR (After acceptance of all reviews) M. Weber	DATE 8/28/77

CP&L ENGINEERING POOL APPROVAL (Specifications Only)
 9/11/77
 SEE ATTACHED SHEET 5 FOR CONDITIONAL APPROVAL.
 John M. Carter 9-13-77
 Conditional Approval

Ebasco Specification
Embankments, Dams, Dikes and Channels

8-28-79

Project Identification No. CAR-SH-CH-4

10. EMBANKMENT CORE (Cont'd)

.5 Moisture Control

The material placed in each layer during compaction, by rolling, shall contain within ± 2 percent the amount of moisture required for maximum degree of compaction as determined by the Owner, and the moisture content shall be uniform, within the tolerances indicated throughout the thickness of the layer. The application of water to the material, if required, shall be performed at the stockpiles, supplemented as required either by sprinkling the preceding layer prior to placing new material thereon or by sprinkling and mixing the new material in place prior to rolling or by a combination of the two methods. No material having a water content greater than 4 percent above the optimum shall be placed on the embankment nor shall any material be placed if the surface of the embankment has moisture more than 2 percent greater than optimum. Such material or surfaces shall be dried out by harrowing or discing and aerating to bring the moisture content within 2 percent of the optimum before rolling or placing new material.

Moisture content of the material shall be determined by either one of the following methods ASTM designation D2216 or D3017 or by "speedy" moisture tester, microwave oven or field stove method at the option of the Owner. If ASTM D3017, "Speedy" moisture tester, microwave oven or field stove method is used to determine moisture content one calibration or check test for the method by comparison with the test by ASTM D2216 shall be performed after every ten tests.

For ASTM D3017, "Speedy" moisture tester, microwave oven or field stove method calibration or check test shall be performed on a similar material for which the method is used in the field. If the calibration or check test indicates a deviation of more than $\pm 2\%$ moisture content the method will be discontinued. An allowance for deviation in moisture content by these methods as determined by calibration tests in comparison with ASTM D2216 and for the tolerance of the method above or below the calibration curve shall be made so that the moisture content of the fill material is within 2 percent of the optimum moisture content as stated in Paragraph 10.5 above.

Any sun-dried, hardened foundation surface or smooth bedding surface shall be prepared for new material by discing or plowing so as to loosen the entire surface to a depth of 2 in. Water shall be added, if necessary to the material at the time of scarifying so that it shall be within ± 2 percent of optimum water content for compaction. Immediately after such scarifying the next layer of material shall be placed over the base and compacted as specified in Paragraph 10.4. The top of surface of freshly placed and rolled layers ordinarily will require no preparation other than moistening ahead of the new layer when the new material is drier than -2 percent of optimum water content.

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AND SUBSTITUTE
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.5 Moisture Control

The material placed in each layer during compaction, by rolling, shall contain within ± 2 percent of optimum moisture content as defined by the Standard Proctor Compaction Test and determined by the Owner. The exception to this moisture control requirement is the West Auxiliary Dam impervious core above elevation 225 which shall have a moisture content, during compaction, within -1 percent and +3 percent of optimum moisture content. The moisture content shall be uniform; ie, within the tolerances indicated throughout the thickness of the layer. The application of water to the material, if required, shall be performed at the stockpiles, supplemented as required either by sprinkling the preceding layer prior to placing new material thereon or sprinkling and mixing the new material in place prior to rolling or by a combination of the two methods. No material having a water content greater than 4 percent above the optimum shall be placed on the embankment nor shall any material be placed if the surface of the embankment has moisture more than 2 percent greater than optimum (3 percent greater than optimum above elevation 225 in the West Auxiliary Dam). Such material or surfaces shall be dried out by harrowing or discing and aerating to bring the moisture content within the above specified moisture contents required for compaction.

Any sun-dried, hardened foundation surface or smooth bedding surface shall be prepared for new material by discing or plowing so as to loosen the entire surface to a depth of 2 in. Water shall be added, if necessary, to the material at the time of scarifying so that it shall be within the above specified moisture ranges required for compaction. Immediately after such scarifying the next layer of material shall be placed over the base and compacted as specified in Paragraph 10.4. The top of surface of freshly placed and rolled layers ordinarily will require no preparation other than moistening ahead of the new layer when the new material is drier than the above specified compaction moisture ranges.

Moisture content of the material shall be determined by any of the following methods, at the option of the Owner: ASTM designation D2216 or D3017 or by "Speedy" moisture tester, microwave oven or field stove method. If ASTM D3017, "Speedy" moisture tester, microwave oven or field stove method is used to determine moisture content these methods shall be continuously calibrated against ASTM D2216 and the calibrated reading shall be used as the moisture reading.

INSERT (CONTINUED)

.5 Moisture Control (Cont'd)

One calibration or check test for the method, by comparison with ASTM D2216 shall be performed after every ten tests on similar material for which the method is used in the field. The calibration check tests shall be statistically evaluated. The method of moisture determination will be considered acceptable if the continuous calibration check tests against ASTM D2216 indicate a deviation of no more than ± 1 percent moisture content with a ninety percent statistical confidence level. If the continuous calibration tests indicate a greater moisture content deviation and lower confidence level the method will be discontinued. No allowance for deviation in moisture content by these methods other than use of the calibration curve will be required if the accuracy of the method is within the ± 1 percent tolerance range at ninety percent confidence level. However, if a field moisture measurement made by a calibrated "Speedy", microwave oven or field stove moisture measurement is within 0.5 percent of the specification limits; i.e., outside ± 1.5 percent of optimum or outside +2.5, -0.5 percent of optimum above elevation 225 in the West Auxiliary Dam, a moisture check shall be performed using ASTM D2216. This check value will be documented as the true field moisture measurement.

ATTACHMENT TO DCN-550-347

PAGE 5 OF 5

9-13-79

CONDITIONAL APPROVAL OF DCN-550-347
BY CP&L ENGINEERING POOL :

DCN-550-347 IS CONDITIONALLY
APPROVED ON THE BASIS THAT THE
PROPOSED CHANGE IS NOT IMPLEMENTED
UNTIL THE FOLLOWING TWO ACTIONS
ARE COMPLETED :

1- A PSAR CHANGE APPROVAL IS FULLY
APPROVED IN ACCORDANCE WITH APPLICABLE
PROCEDURES .

2- FORMAL WRITTEN APPROVAL OF THE
PROPOSED CHANGE IS OBTAINED FROM
THE NRC .
