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RECIP. NAME RECIPIENT AFFILIATION

DENTON, H. R. Office of Nuclear Reactor Regulation, Director (post 851125

SUBJECT: Forwards Rev 1 to WCAP-10230, "Evaluation of Acceptability of Reactor Vessel Head Life Rig,...to Requirements of NUREG-0612...," & requests relief from requirements of NUREG-0612 Table 3.1-1 re load block.

SEE SUBJECT FILES FOR ENCLOSURE

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TITLE: OR Submittal: USI A-36 Control of Heavy Load Near Spent Fuel-NUREG-06

NOTES: 05000315

OL: 10/25/74

05000316

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Add: EB(Ballard)* *-W/Encl
RSB(Berlinger)* Limited Dist
PSB(Gammil)*

10 Encls

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INDIANA & MICHIGAN ELECTRIC COMPANY

P.O. BOX 16631
COLUMBUS, OHIO 43216

January 29, 1986
AEP:NRC:0514N

Donald C. Cook Nuclear Plant Nos. 1 and 2
Docket Nos. 50-315 and 50-316
License Nos. DPR-58 and DPR-74
NUREG-0612, "CONTROL OF HEAVY LOADS"
ADDITIONAL INFORMATION

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

Reference: Letter No. AEP:NRC:0514M, dated September 11, 1985.

Dear Mr. Denton:

Pursuant to a request made by members of your staff, this letter and its attachments are being submitted in order to clarify the intent of the above-referenced letter, in which we modified Table 2.1.3.c.1 to restrict movement of the crane load block over the spent fuel pool only when the main hoist is deenergized. The second item of this submittal corrects a discrepancy in our Phase II submittal. The third item addresses and transmits the Revision 1 to WCAP-10230 that was noted in the above-referenced letter.

We request relief from the requirement of NUREG-0612 Table 3.1-1, Footnote 1, which states that the load block should be considered a heavy load even if it is not carrying a load. As an alternative requirement, we propose that whenever load-handling activities are being performed over, or adjacent to, the spent fuel pool utilizing the auxiliary hook, the main load block will be deenergized and unloaded. The word "adjacent" refers to the area between the designated load path and the edge of the spent fuel pool.

Some of the typical load-handling activities that are currently being performed using the auxiliary hook are listed below.

A093
1/1

Add: EB (Ballard)
RSB (Berlinger)
PSB (Gammill)

Activity Using the Auxiliary Hook	Position of the Main Hook
1) Loading the new fuel using the auxiliary hook.	Main hook will be unloaded and will travel close to the edge or over the spent fuel pool. Electrical interlocks must be bypassed.
2) Maintenance activities on the weir gate which separates the transfer canal and spent fuel pool.	Main hook will be unloaded and will travel close to the edge or over the spent fuel pool. Electrical interlocks must be bypassed.
3) Relamping of the ceiling above spent fuel pool using the trolley.	Both hooks will be unloaded and will be over the spent fuel pool. Electrical interlocks must be bypassed.
4) Maintenance work while carrying components from the Unit No. 1 equipment room located in the N-W corner of the pool area using the auxiliary hook.	Main hook will be unloaded and will travel close to the edge or over the spent fuel pool. Electrical interlocks must be bypassed.
5) Removing/installing the spent fuel handling tools which are stored inside the spent fuel pool (along the wall).	Main hook will be unloaded and will travel over the spent fuel pool. Electrical interlocks must be bypassed.
6) Installation of the superstructure of the new and spent fuel pool (N&SFP) crane prior to its usage. The installation is done using the auxiliary hook.	Main hook will be unloaded and will travel close to the edge of the spent fuel pool. Electrical interlocks must be bypassed.
7) Checking the hoist height interlock limit switches of N&SFP crane with a man-lift attached to the auxiliary hook.	Main hook will be unloaded and will travel close to the edge of the pool. Electrical interlocks must be bypassed.

In earlier conversations with your staff, we identified five activities that involve moving the load block over the spent fuel pool. We subsequently identified two additional activities. These are designated as items (6) and (7) above.

When the main hoist is deenergized and there are no loads on the main hook, the load block will be a passive component of the trolley rather than an active component and will be an integral part of the crane. We believe that our procedures will meet the intent of NUREG-0612. Upon receiving NRC approval, we will be revising the plant procedures to deenergize the main hoist prior to the trolley being moved over the spent fuel pool. The area of the spent fuel pool is defined as that area of the pool which contains the spent fuel racks.

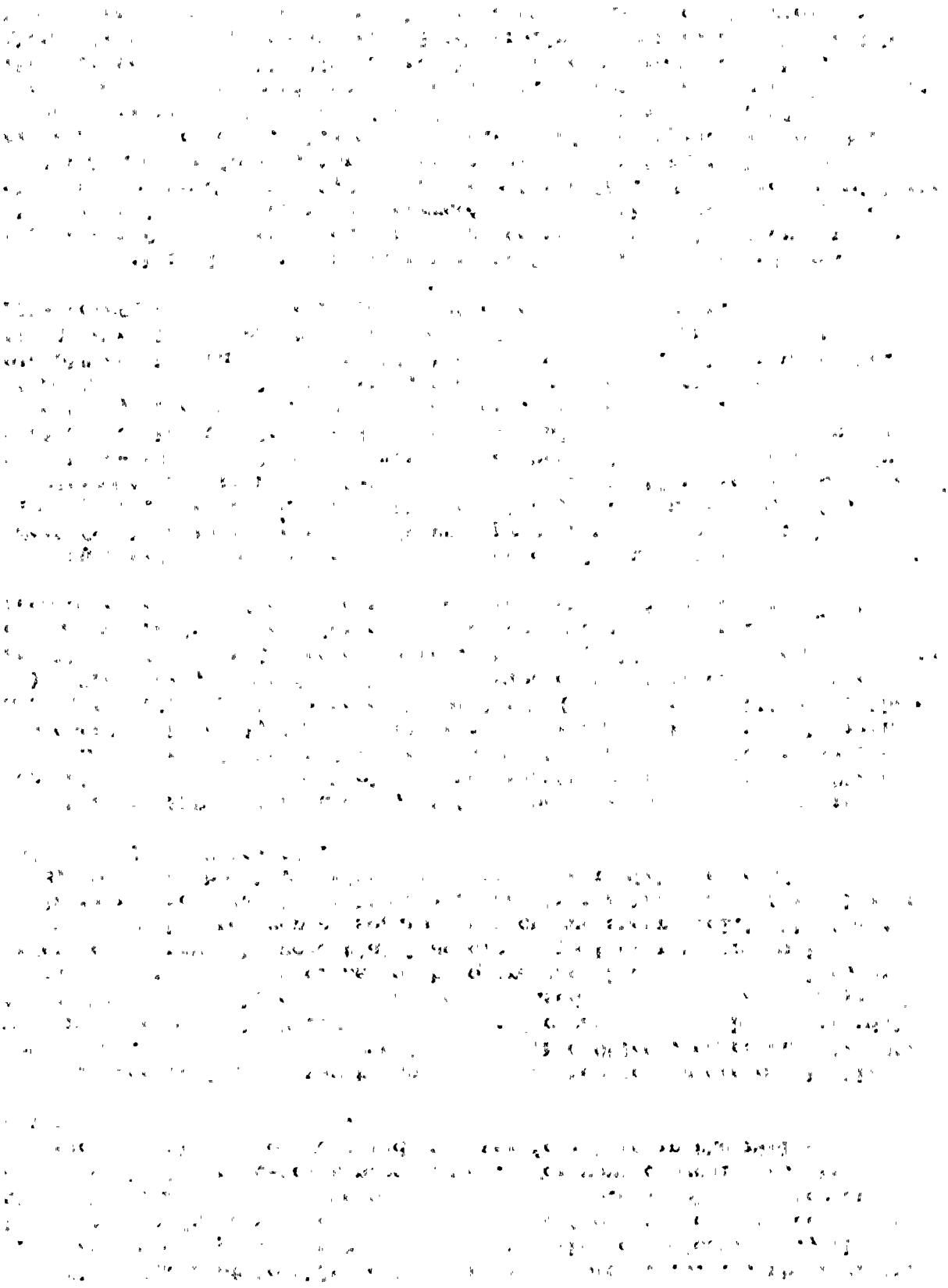
The attachment to this letter contains Table 2.1.3.c.1, which includes the above clarification in the footnote for the load block, i.e., the main hook not carrying any load for the case when the main hoist is deenergized. This table supersedes the version of Table 2.1.3.c.1 submitted to your office with the above-referenced letter. For your convenience, the revisions to the table are noted by a vertical line in the right-hand margin.

The second item serves to correct a discrepancy in one of the Phase II submittals. In the Phase I submittal (AEP:NRC:0514C), dated June 18, 1982, we committed that the "...Component specific safe load paths remain within the indicated load handling area and are based on the general concept of handling heavy loads as close to the operating floor as is feasible, in order to minimize the potential load drop impact energy, and with the maximum possible horizontal separation from the spent fuel." The Safety Evaluation Report (SER) for Phase I issued by the NRC, dated September 20, 1983, approved the above criterion as consistent with the requirements of Guideline 1 of NUREG-0612.

The NRC SER, dated June 28, 1985, issued for the Phase II of the Control of Heavy Loads at Nuclear Power Plants noted in part that "Based on the improvements in heavy loads handling obtained from implementation of NUREG-0612 (Phase I), further action is not required to reduce the risks associated with the handling of heavy loads (See enclosed NUREG-0612 Phase II). Therefore, a detailed Phase II review of heavy loads is not necessary and Phase II is considered completed. However, while not a requirement, we encourage the implementation of any actions you identified in Phase II regarding the handling of heavy loads that you consider appropriate."

Currently we are performing a review of all our Phase II submittals to identify the action items, and in that process we have identified a discrepancy. In our submittal AEP:NRC:0514A, dated August 27, 1982, we committed to maintain a 15.0-foot horizontal separation from the pool, as per NUREG-0612 guidelines for movement of heavy loads near the spent fuel pool using the Auxiliary Building Crane. This was a discrepancy in our submittal, which we would like to correct. Based on our Phase I commitment of maximum horizontal separation, the maximum separation we can maintain is 9'-10½" on the south side and 5'-7" on the west side. The drawing showing the load path was submitted to your office as an attachment to letter AEP:NRC:0514C. It is being resubmitted for clarification.

As a third item, we are transmitting Revision 1 to WCAP-10230, which was received from Westinghouse Electric Corporation. The major revision to the report is due to using the correct weight of the reactor internals, which was changed from 260,000 lbs. to 325,000 lbs. In accordance with the Westinghouse conclusion, three specific items do not meet the design criteria of Section 3.2.1.1 of ANSI 14.6 requiring application of stress design factors of three and five with the accompanying allowable stress limits of yield and ultimate, respectively. However, all three items meet the AISC Code allowable limits and thus are considered acceptable. It should be noted that during this load handling sequence, all the fuel has been removed from the core and the containment building. We therefore



agree with the Westinghouse conclusion that the lift equipment is acceptable for use. The other corrections are considered minor and will not alter the content of the report significantly. Three copies of the WCAP report are attached.

This document has been prepared following Corporate procedures which incorporate a reasonable set of controls to insure its accuracy and completeness prior to signature by the undersigned.

Very truly yours,

M. P. Alexich
Vice President

cm

Attachments

cc: John E. Dolan
W. G. Smith, Jr. - Bridgman
R. C. Callen
G. Bruchmann
G. Charnoff
NRC Resident Inspector - Bridgman

ATTACHMENT 2 TO
AEP:NRC:0514N

TABLE 2.1.3.C.1
SURVEY OF HEAVY LOADS*
AEP:NRC:0514C

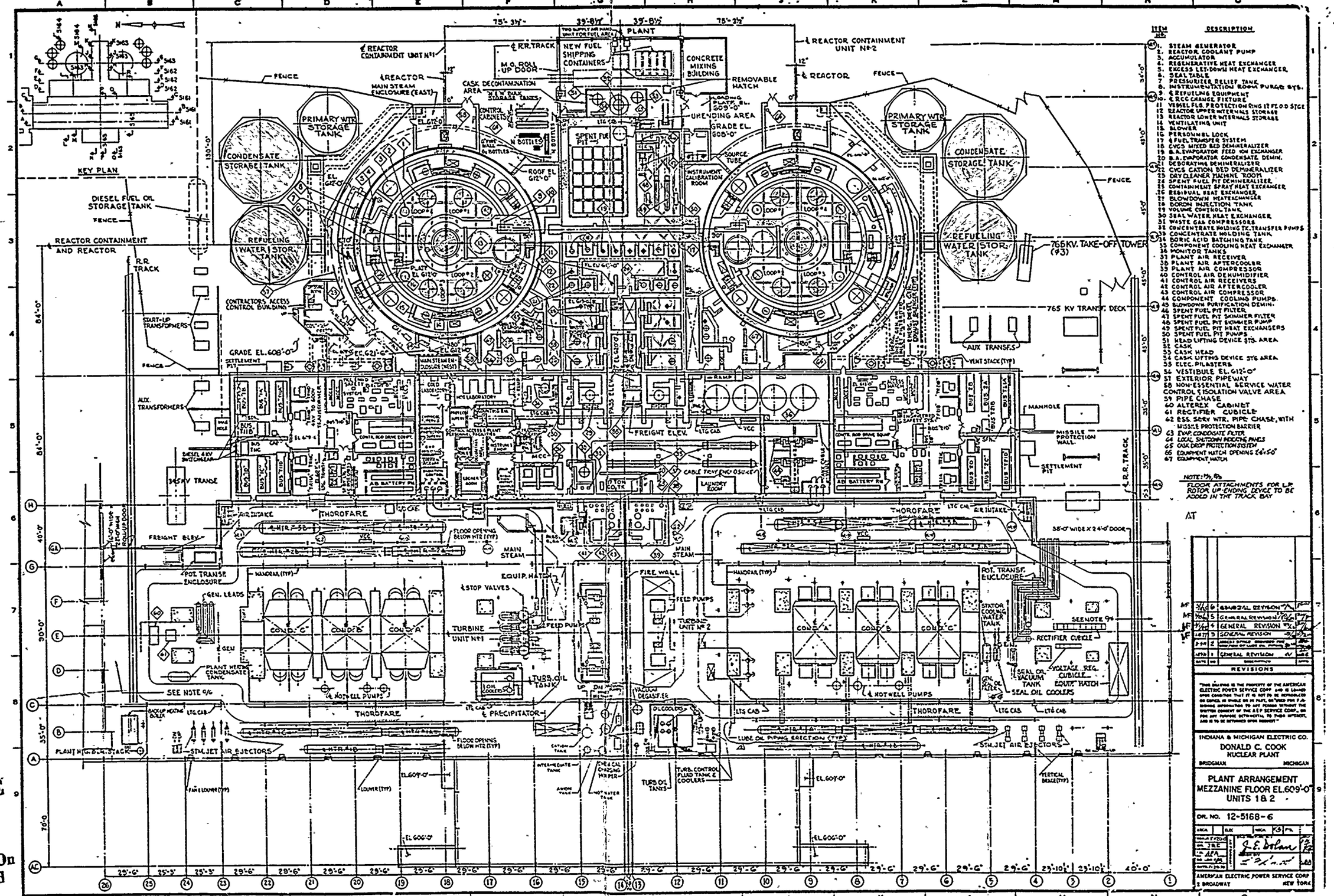
AREA	CRANE (A = AUX. BLDG. CRANE; FHC = NEW & SPENT FUEL HANDLING CRANE)	LOADS HANDLED	OVER (O) OR ONLY PROXIMITY (P) TO SPENT FUEL	APPROXIMATE WEIGHT	FREQUENCY HANDLED	LIFTING DEVICE	HANDLING PROCEDURE
AUXILIARY BUILDING	A	1. Spent Fuel Shipping Cask	(P)	110 Tons	(Future)	(Future)	(Future)
	A	2. Radiation Protection Shields	(P)	55 Tons	As required during refueling outages	Slings	12 MHP 5021.001.0[illegible]
	A	3. Irradiated Specimen Shipping Cask	(P)	1-2 Tons	8 times in 20 yrs. (2 Units)	Slings	12 MHP-SP-006
	A	4. Plant Equipment (e.g. pumps, motors, valves, heat exchangers)	(P)	Max 4 Tons	As required for Modification or replacement	Slings	12 MHP 5001.001.036
	A	5. New Fuel Shipping Containers with Assembly	(P)	1-1/2 Tons	50/year	Slings	12 MHP 4050 FDF .001 12 MHP 4050 FDF .002
	FHC	6. Spent Fuel Assembly	(O)	1850#/1890#	100-150 per refueling	Handling Tool	12 MHP 4050 FDF .008
	A	7a. Crane Load Block	(P)	4.25 T	Integral to Crane	Crane Ropes	12 MHP 4050 FDF .011
		7b. Crane Load Block	(O)¶	4.25 T	Integral to Crane	Crane Ropes	12 MHP 5021.082.020 12 MHP 5021.001.036
	A & FHC	8. New Fuel Assembly	(P)	1850#/ 1890#**	100-150 per refueling	Handling Tool	12 MHP 4050 FDF .008
	A	9. Superstructure New & Spent Fuel Handling Crane	(P)	25 Tons	Approx. every 18 mos.	Slings	Instruction Book #105671 Dwight Foote, Inc.
	A	10. Equipment Hatch	(P)	45 Tons	As required during refueling	Slings	12 MHP 5021.001.032
	A	11. Reactor Coolant Pump Rotating Assembly	(P)	28 Tons	As required during Maintenance	Slings	12 MHP 5021.001.036
	A	12. Reactor Coolant Pump Motor	(P)	38 Tons	As required during Maintenance	Slings	12 MHP 5021.001.036
	A	13. LSA Waste Boxes	(P)	2 Tons	52/year	Slings	12 MHP 5021.001.036
	A	14. Waste Container Metal Bin	(P)	2 Tons	52/year	Slings	12 MHP 5021.001.036
	A	15. Glycol Tank	(P)	5 Tons	12/year	Slings	12 MHP 5021.001.036
	A	16. Reactor Stud Rack (12 Studs/Rack)	(P)	4-5 Tons	4/year	Slings	12 MHP 5021.001.036

* Heavy loads are defined as "any load, carried in a given area after a plant becomes operational, that weighs more than the combined weight of a single spent fuel assembly and its associated handling tool for the specific plant in question."

** Unit No. 1 1850#, Unit No. 2 1890#

¶ The load block is over or adjacent to the pool; with main hoist deenergized and no load on the Main Hook

Attachment 2 to AEP:NRC:0514N.



ITEM NO.	DESCRIPTION
1.	STEAM GENERATOR
2.	REACTOR COOLANT PUMP
3.	ACCUMULATOR
4.	REGENERATIVE HEAT EXCHANGER
5.	EXCESS LET-DOWN HEAT EXCHANGER
6.	SEAL TABLE
7.	PRESSURIZER RELIEF TANK
8.	INSTRUMENTATION ROOM PURGE SYS.
9.	℄ REFUELING EQUIPMENT
10.	℄ RCC CHANGE FIXTURE
11.	VESSEL FLG. PROTECTION RING IT FEED STGE
12.	REACTOR UPPER INTERNALS STORAGE
13.	REACTOR LOWER INTERNALS STORAGE
14.	VENTILATING UNIT
15.	BLOWER
16.	PERSONNEL LOCK
17.	℄ FUEL TRANSFER SYSTEM
18.	CVCS MIXED BED DEMINERALIZER
19.	B.A. EVAPORATOR FEED ION EXCHANGER
20.	B.A. EVAPORATOR CONDENSATE DEMIN.
21.	DEBORATING DEMINERALIZER
22.	CVCS CATION BED DEMINERALIZER
23.	DRY CLEANER MACHINE ROOM
24.	SPENT FUEL PIT DEMINERALIZER
25.	CONTAINMENT SPRAY HEAT EXCHANGER
26.	RESIDUAL HEAT EXCHANGER
27.	BLOWDOWN HEATEXCHANGER
28.	BORON INJECTION TANK
29.	VOLUME CONTROL TANK
30.	SEAL WATER HEAT EXCHANGER
31.	WASTE GAS COMPRESSORS
32.	CONCENTRATE HOLDING PUMPS & TRANSFER PUMPS
33.	CONCENTRATE HOLDING TANK
34.	BORIC ACID BATCHING TANK
35.	COMPONENT COOLING HEAT EXCHANGER
36.	MONITOR TANKS
37.	PLANT AIR RECEIVER
38.	PLANT AIR AFTERCOOLER
39.	PLANT AIR COMPRESSOR
40.	CONTROL AIR DEHUMIDIFIER
41.	CONTROL AIR RECEIVERS
42.	CONTROL AIR AFTERCOOLER
43.	CONTROL AIR COMPRESSOR
44.	COMPONENT COOLING PUMPS
45.	BLOWDOWN PURIFICATION DEMIN.
46.	SPENT FUEL PIT FILTER
47.	SPENT FUEL PIT SKIMMER FILTER
48.	SPENT FUEL PIT SKIMMER PUMP
49.	SPENT FUEL PIT HEAT EXCHANGERS
50.	SPENT FUEL PIT PUMPS
51.	HEAD LIFTING DEVICE STG. AREA
52.	CASK
53.	CASK HEAD
54.	CASK LIFTING DEVICE STG AREA
55.	ELEC. PRHEATERS
56.	VESTIBULE EL 612'-0"
57.	EXTERIOR PIPEWAY
58.	NON-ESSENTIAL SERVICE WATER CONTROL & ISOLATION VALVE AREA
59.	PIPE CHASE
60.	ALTEREX CABINET
61.	RECTIFIER CUBICLE
62.	ESS. SERV WTR. PIPE CHASE, WITH MISSILE PROTECTION BARRIER
63.	EVAP. CONDENSATE FILTER
64.	LOCAL SHUTDOWN INDICATING PANELS
65.	CASK DROP PROTECTION SYSTEM
66.	EQUIPMENT HATCH OPENING 26'-0"x50'
67.	EQUIPMENT HATCH

AF	3/16	6	ISSUED AS REVISION "A"
AF	2/16	5	GENERAL REVISION
AF	1/16	4	GENERAL REVISION
AF	12/77	3	GENERAL REVISION
AF	7-77	2	
AF	5-77	1	GENERAL REVISION
DATE	NO.		REVISIONS

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INDIANA & MICHIGAN ELECTRIC CO.
DONALD C. COOK NUCLEAR PLANT
BRIDGMAN MICHIGAN

PLANT ARRANGEMENT MEZZANINE FLOOR EL.609'-0" UNITS 1 & 2

DR. NO. 12-5168-6

DESIGNED	DRN.	TRACED	CHK.	APP'D
J.R.E.				J.E. Dolan
DATE 6/29/76				

AMERICAN ELECTRIC POWER SERVICE CORP
2 BROADWAY NEW YORK

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