REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:8208270377 DOC.DATE: 82/08/25 NOTARIZED: NO DOCKET #
FACIL:50-361 San Onofre Nuclear Station, Unit 2, Southern Californ 05000361
50-362 San Onofre Nuclear Station, Unit 3, Southern Californ 05000362
AUTH.NAME AUTHOR AFFILIATION
BASKIN,K.P. Southern California Edison Co.
RECIP.NAME RECIPIENT AFFILIATION
MIRAGLIA,F. Licensing Branch 3

SUBJECT: Forwards addl info re turbine gantry crane in response to NUREG-0612, "Control of Heavy Loads." Crane excluded from further evaluation.No load drop could impact both trains of any safe-shutdown sys.

DISTRIBUTION CODE: B030S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 8
TITLE: Lic Submittal: Control of Heavy Loads Near Spent Fuel (USI A-36)

NOTES:J Hanchett 1cy PDR Documents. ELD Chandler 1cy. 05000361
NRR Scaletti 1cy.
J Hanchett 1cy PDR Documents. ELD Chandler 1cy. 05000362
NRR Scaletti 1cy.

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
	A/D LICENSNG		1	0	LIC BR #3 BC		1	0
	LIC BR #3 LA		1	0	NRR CLEMENSON01		4	4
	ROOD,H.		1	1				
INTERNAL:	ELD/HDS2		1	0	NRR REQUA,G		1	1
	NRR/DE/CEB	11	1	1	NRR/DE/EQB	13	3	3
	NRR/DE/GB	28	1	1	NRR/DE/HGEB	30	2	2
	NRR/DE/MEB	18	1	1	NRR/DE/MTEB	17	1	1
	NRR/DE/QAB	21	1	1	NRR/DE/SAB	24	1	1
	NRR/DE/SEB	25	1	1	NRR/DHFS/HFEB	40	1	1
	NRR/DHFS/LQB	32	1	1	NRR/DHFS/OLB	34	1	1
	NRR/DHFS/PTRB	20	1	1	NRR/DSI/AEB	26	1	1
	NRR/DSI/ASB	27	1	1	NRR/DSI/CPB	10	1	1
	NRR/DSI/CSB	09	1	1	NRR/DSI/ETSB	12	1	1
	NRR/DSI/ICSB	16	1	1	NRR/DSI/PSB	19	1	1
	NRR/DSI/RAB	22	1	1	NRR/DSI/RSB	23	1	1
	NRR/DST/LGB	33	1	1	REG FILE	04	1	1
	RGN5		1	1	RM/DDAMI/MIB		1	0
EXTERNAL:	ACRS	41	10	10	FEMA-REP DIV	39	1	1
	LPDR	03	1	1	NRC PDR	02	1	1
	NSIC	05	1	1	NTIS		1	1
NOTES:			3	3				

TOTAL NUMBER OF COPIES REQUIRED: LTTR 57 ENCL 52

Southern California Edison Company

P. O. BOX 800
2244 WALNUT GROVE AVENUE
ROSEMEAD, CALIFORNIA 91770

K. P. BASKIN
MANAGER OF NUCLEAR ENGINEERING,
SAFETY, AND LICENSING

TELEPHONE
(213) 572-1401

August 25, 1982

Director, Office of Nuclear Reactor Regulation
Attention: Mr. Frank Miraglia, Branch Chief
Licensing Branch No. 3
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Gentlemen:

Subject: Docket Nos. 50-361 and 50-362
San Onofre Nuclear Generating Station
Units 2 and 3

Enclosed are sixty-three (63) copies of additional information concerning NUREG-0612, Control of Heavy Loads. This additional information is our evaluation of the Turbine Gantry Crane Side boom in accordance with Section 5.1, Part IV of NUREG-0612. Responses to the control of heavy loads information request for San Onofre Units 2 and 3 have been submitted to the NRC by letters dated July 7, 1981, April 30, 1982, June 30, 1982 and August 3, 1982.

If you have any questions or comments concerning this information, please contact me.

Very truly yours,

K P Baskin

Enclosures

B030

unless the plant is already in cold shutdown. In general, these lifts are associated with maintenance of the valves using equipment lighter than the maximum load cited. The 2.8 ton load is the FWIV body, which will be seldom or never removed.

Approximately once every 5 years, the Tendon Surveillance Platform (TSP) is moved from one side of the Containment buttress to the other, to accomplish tendon surveillances. During this operation, the TSP does not pass over any safety related equipment. It is not planned to completely remove the TSP from this area unless major repairs are needed. This lift can take place during plant operation and will follow a prescribed safe load path. This safe load path, which is used for loads which must be carried to and from the MSIV area, is shown on Figure 1.

The safe load path is laid out such that no safety related equipment is directly exposed to impacts of loads dropped by this crane. The safe shutdown equipment within the Safety Equipment Building and the Piping and Electrical Gallery Building is protected by two levels of reinforced concrete floors which serve as missile barriers. The concrete tunnel containing the Auxiliary Feedwater Pump discharge lines is constructed with 1'-6" thick reinforced concrete walls and roof covered with 6 feet of soil. Because of this physical isolation, postulated drops would not affect these pipes.

Because safe shutdown equipment is located adjacent to the travel path for this crane, an evaluation has been performed to assure that a load drop accident is not capable of damaging both operating trains of any safe shutdown system. In the case of the Safe Shutdown Heat Exchangers (SSHE), both heat exchangers are outside but adjacent to the travel path of the side boom. The SSHE's are totally redundant systems, physically isolated in separate compartments and protected by 2'-6" thick missile barrier roof slabs. These compartments are fully separated by a concrete wall which extends 33 feet above the missile barrier, thereby ensuring that a drop cannot simulataneously impact both compartments. In the unlikely event of a load drop sufficient to penetrate a missile barrier, only one exchanger could be affected and the remaining heat exchanger would be available to maintain safe shutdown until the operability of the second train is restored.

The MSIV enclosures are physically separated by a distance of 90 feet. Therefore, heavy loads could pass over only one enclosure at a time. The enclosures are covered by 3'-0" thick reinforced concrete missile barrier roof slabs which shield them from load drops. A postulated load drop could, however, impact the vent stacks which project above the roof slab. Damage to these stacks would not necessarily render them inoperable. Even if damage were to occur, this situation in itself would neither cause a shutdown nor impair the ability to achieve a shutdown. Since operational conditions for Combustion Engineering plants require that both steam loops be operable when a Unit is operating, the remaining steam loop is available to provide atmospheric venting, if required. Further, plant technical specifications require that, with one MSIV inoperable but open, power operation may continue provided the inoperable valve is restored to operable status within four hours; otherwise reduce power to less than or equal to 5% rated thermal power within the next two hours.

Summary

While the Turbine Gantry Crane side boom is provided as a means of access to the MSIV area, its use to handle loads in excess of 1,500 pounds is very infrequent. Load handling operations within the MSIV enclosure occur only when the plant is shut down and the MSIV or FWIV are out of service. A safe load path is provided for load handling operations involving this crane which effectively isolates these operations from safe shutdown equipment by a combination of physical separation and redundant missile barriers. An evaluation of possible accidental load drops which could occur outside the load path was also performed. This evaluation demonstrated that no load drop was possible which could impact both trains of any safe-shutdown system, even if missile protection were damaged. This crane has thus been excluded from further evaluation.

CONTROL OF HEAVY LOADS
RESPONSE TO NUREG-0612
SONGS 2/3

Background

NUREG-0612 and its accompanying cover letter dated December 22, 1980, requested a review of the controls for handling heavy loads (greater than 1,500 pounds) at San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS 2/3). This review has been undertaken, applicable NUREG recommendations have been implemented and documentation of this implementation has been submitted to the NRC.

The following is a summary of the information submitted:

- The July, 1981 report addressed the information required in Section 2.1 of Enclosure 3 of the December 22, 1980 letter for all permanent load handling systems identified at that time.

- The April, 1982 report addressed Sections 2.2, 2.3 and 2.4 of Enclosure 3. In addition, this report addressed nine cranes which had not been described in the July, 1981 report.

- The June, 1982 report addressed Section 2.1 for eight of the nine newly identified cranes.

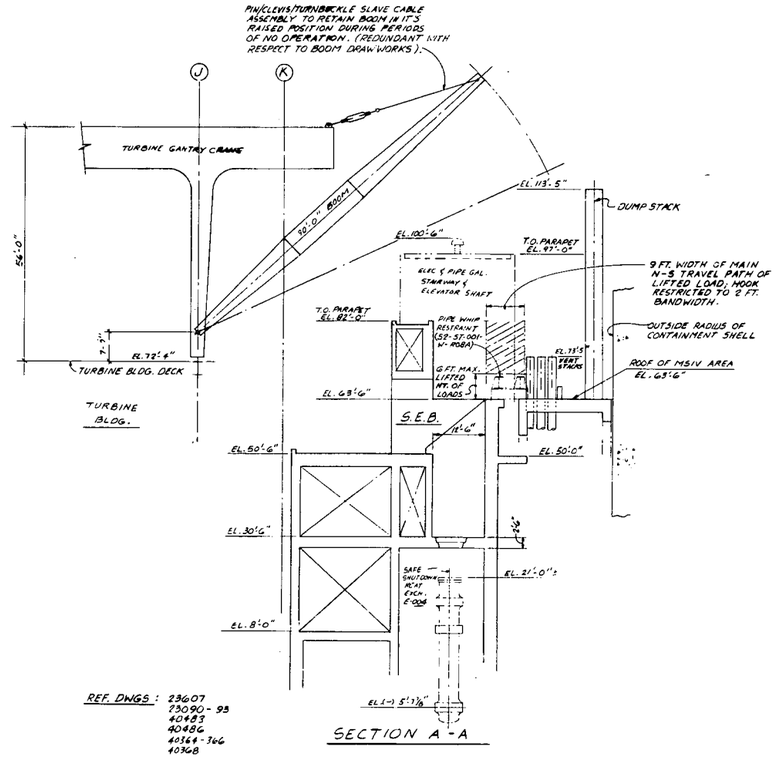
- The August 3, 1982 report responded to NRC/EG&G questions concerning the July, 1981 report.

This report, which completes our NUREG-0612 review, addresses Section 2.1 of the above mentioned Enclosure 3 for the Turbine Gantry Crane Side Boom. Our earlier evaluation as reported in the April 1982 report concluded that a worst case heavy load drop would not exceed the acceptance criteria of Section 5.1 (IV) of NUREG 0612. This report discusses the evaluation of the side boom extension based on the criteria of Section 2.1.2 of Enclosure 3.

Discussion

The Turbine Gantry Crane Side Boom is a 90 foot derrick - type boom permanently affixed to the Unit 3 Turbine Gantry Crane superstructure. The boom was designed and manufactured by Manitowoc Engineering Company under criteria of ANSI B30.5, 1968 ("Crawler, Locomotive and Truck Cranes") and the AISC Steel Construction Manual. It was originally designed and certified for 25 tons during construction but is currently rated at 10 tons consistent with maximum load requirements as a permanent plant crane.

The use of this crane is limited to infrequent lifts of the Tendon Surveillance Platforms (6 tons), the Main Steam Isolation Valve (MSIV) Components and Feedwater Isolation Valves (FWIV) (2.8 ton maximum load for these items). Removal of either the MSIV or the FWIV cannot be undertaken



SECTION A-A

REF. DWGS : 23607
73090-93
40483
40486
40564-366
40568

FIGURE 1
Sht. 2 of 2

SEE DWG. NO'S. 716029 TO 4 INCLUDING 716099 FOR THE "HEAVY LOAD HANDLING SYSTEMS"

QUALITY CLASS II

BECHTEL CORPORATION ENGINEERS & CONSTRUCTORS LOS ANGELES CA		
JOB NO	DATE	APPROVED

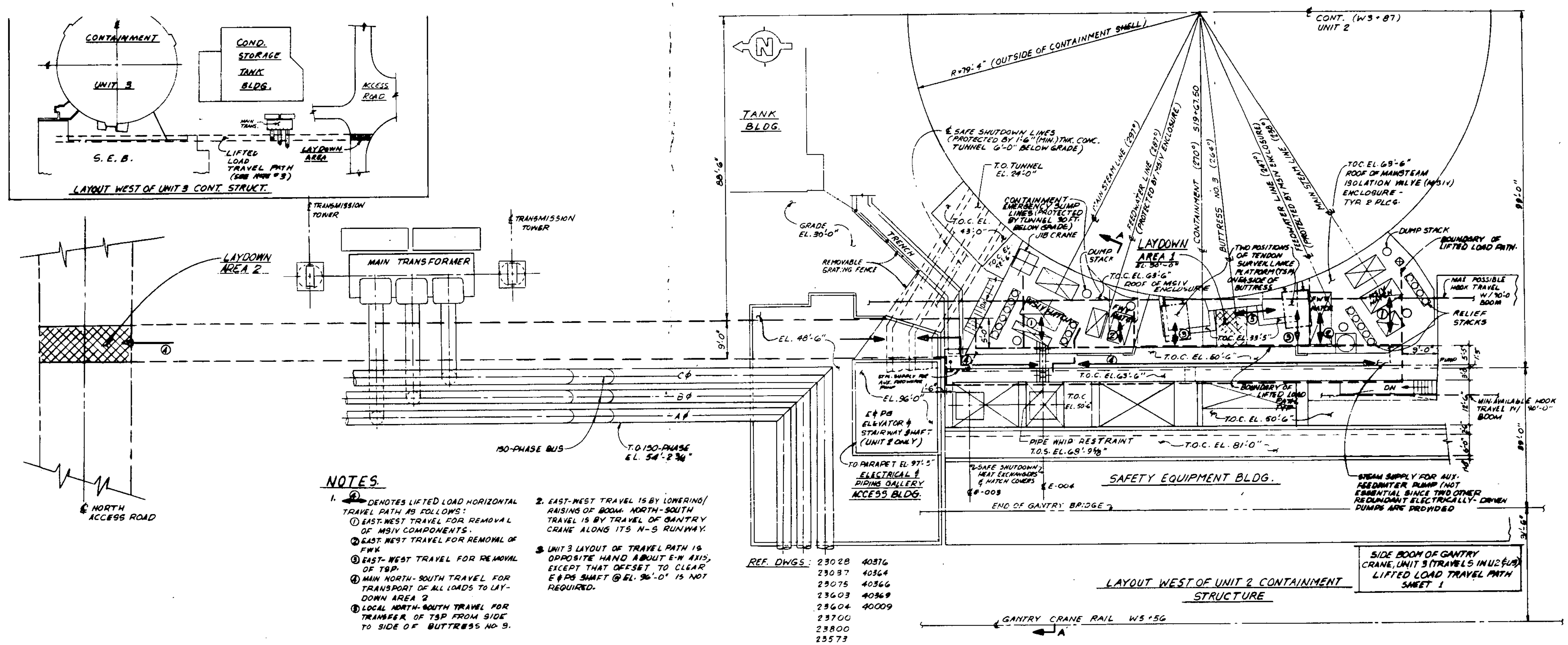
DWG. NO	CROSS REFERENCES

NO.	REVISIONS	DATE	DR.	CHK.	E G S	CHF. L	P.E.	Q.A.E.
A	ISSUED FOR REVIEW AND COMMENTS							

NO.	REVISIONS	DATE	DR.	CHK.	APPROVAL	ENGR.	P.E.	Q.A.E.

JOB NO	SAN ONOFRE NUCLEAR GENERATING STATION
FILE	SIDE BOOM OF GANTRY CRANE LIFTED LOAD TRAVEL PATH SECTION
	SOUTHERN CALIFORNIA EDISON COMPANY SCALE: 3/32" = 1'-0" LOS ANGELES, CALIF

716035-A



NOTES.

1. (4) ⟷ DENOTES LIFTED LOAD HORIZONTAL TRAVEL PATH AS FOLLOWS:
   1. EAST-WEST TRAVEL FOR REMOVAL OF MSIV COMPONENTS.
   2. EAST-WEST TRAVEL FOR REMOVAL OF FWV.
   3. EAST-WEST TRAVEL FOR REMOVAL OF TSP.
   4. MAIN NORTH-SOUTH TRAVEL FOR TRANSPORT OF ALL LOADS TO LAYDOWN AREA 2
   5. LOCAL NORTH-SOUTH TRAVEL FOR TRANSFER OF TSP FROM SIDE TO SIDE OF BUTTRESS NO. 3.
2. EAST-WEST TRAVEL IS BY LOWERING/RAISING OF BOOM. NORTH-SOUTH TRAVEL IS BY TRAVEL OF GANTRY CRANE ALONG ITS N-S RUNWAY.
3. UNIT 3 LAYOUT OF TRAVEL PATH IS OPPOSITE HAND ABOUT E-W AXIS, EXCEPT THAT OFFSET TO CLEAR E & PS SHAFT @ EL. 96'-0" IS NOT REQUIRED.

SEE DWG NO'S 716029 TO & INCLUDING 716049 FOR THE "HEAVY LOAD HANDLING SYSTEMS"

FIGURE 1
Sht. 1 of 2

QUALITY CLASS II

BECHTEL CORPORATION
ENGINEERS & CONSTRUCTORS
LOS ANGELES, CALIF

JOB NO	DATE	APPROVED

A — ISSUED FOR REVIEW AND COMMENTS

SAN ONOFRE NUCLEAR GENERATING STATION
SIDE BOOM OF GANTRY CRANE LIFTED LOAD TRAVEL PATH PLAN
SOUTHERN CALIFORNIA EDISON COMPANY
LOS ANGELES, CALIF.

716034-A