

ORGANIZATION: SARGENT & LUNDY ENGINEERS
CHICAGO, ILLINOIS

REPORT NO.: 99900507/82-02	INSPECTION DATE(S): 10/19-21/82 & 10/25-29/82	INSPECTION ON-SITE HOURS: 122
CORRESPONDENCE ADDRESS: Sargent & Lundy Engineers ATTN: Mr. R. W. Patterson Senior Partner 55 East Monroe Street Chicago, IL 60603		
ORGANIZATIONAL CONTACT: Mr. H. S. Taylor, Head, Quality Assurance Division TELEPHONE NUMBER: (312) 269-6371		
PRINCIPAL PRODUCT: Architect Engineering Services		
NUCLEAR INDUSTRY ACTIVITY: Sargent & Lundy (S&L) is the architect engineer on 10 nuclear power plants that are in the design and/or construction phase and has minor involvement at 1 nuclear power plant that is under construction. S&L is also engaged in modification, repair, or service contracts on 12 operating nuclear power plants.		
ASSIGNED INSPECTOR:	<u>CJ Hale / per</u> D. D. Chamberlain, Reactor Systems Section (RSS)	<u>12/3/82</u> Date
OTHER INSPECTOR(S):	P. H. Harrell, RSS P. C. Sakowski, RSS	
APPROVED BY:	<u>CJ Hale</u> C. J. Hale, Chief, RSS	<u>12/3/82</u> Date
INSPECTION BASES AND SCOPE:		
A. BASES: S&L Topical Report No. SL-TR-1A and 10 CFR Part 50, Appendix B.		
B. SCOPE: Status of previous inspection findings and the following: (1) Cincinnati Gas and Electric Company (W. H. Zimmer) report stating S&L did not adequately translate applicable electrical separation criteria into the installation specifications and/or drawings; (2) Public Service Indiana (Cont. on next page)		
PLANT SITE APPLICABILITY.		
This inspection relates to the following plant docket: 50-358 and 50-546/547.		

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PDR GA999 EECSALE
99900507 PDR

ORIGINAL
Certified By Rheanne Clark

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SCOPE: (Cont.) (Marble Hill, Units 1 and 2) report that existing procedures did not require specification or design changes made via engineering change notices, specification amendments, or drawing revisions to be contractually imposed on suppliers or contractors; (3) an NRC Region III report (Zimmer) stating the fire protection system was installed with no evidence of calculations or quality assurance; and (4) an NRC Region III request regarding a review of the seismic design of the main steam line from the outboard containment isolation valve to the turbine stop valves.

A. VIOLATIONS:

None

B. NONCONFORMANCES:

1. Contrary to S&L Topical Report (SL-TR-1A, Revision 5), Section 05.01 and Project Instruction PI-ZI-2.1, approved Design Document Changes (DDC) are not being incorporated into the affected design document within the specified two-month time period.
2. Contrary to SL-TR-1A, Revision 5, Section 05.01 and General Quality Assurance Procedure GQ-3.12, DDC status reports are not being maintained with the latest information as evidenced by: (1) status reports not listing all DDC's that have been issued at the site nor do the reports list all DDC's that have been received by S&L, and (2) status reports do not accurately reflect the current status of all DDC's.
3. Contrary to SL-TR-1A, Revision 5, Section 05.01 and Project Instruction PI-ZI-10.1, CABLE TRAY ROUTING POINT WEIGHT CALCS, REC 42381, performed for the Zimmer Project, compared the cable weight loading only to the 40-psf limit and failed to consider the weight of the cable trays as required to obtain the total tray support loading.

C. UNRESOLVED ITEMS:

None

D. OTHER FINDINGS OR COMMENTS:

1. Main Steam Line Seismic Design (Zimmer Project) - This area of inspection resulted from an NRC Region III request for NRR to evaluate the S&L design calculations regarding the seismic design of the main

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steam lines in the turbine building on the Zimmer Project. The main steam lines from the outboard containment isolation valves to the main turbine stop valves should be designed to withstand the safe shutdown earthquake and remain functional (Regulatory Guide 1.29, Revision 1; FSAR, Chapter 30; and FSAR, Appendix C). There was participation in this review by Region III (D. Keating), an NRR mechanical (D. Terao) and a structural representative (R. E. Lipinski), and Region IV (D. D. Chamberlain). The NRR mechanical representative was able to review the seismic analysis and sample support calculations performed for the main steam line and found that based on the design documents examined, the FSAR commitments were being met.

The NRR structural representative was not able to obtain all of the information required to make a conclusion regarding the ability of the turbine building structures to protect and support the main steam line during the safe shutdown earthquake. He requested S&L to accumulate certain information and a followup inspection will be conducted at S&L when that information is available. Final conclusions regarding the adequacy of the main steam line design will be documented after this followup inspection.

2. Design Change Control - This area of inspection is a followup from a previous NRC inspection (99900507/82-01) regarding the interface between the licensee (Cincinnati Gas and Electric Company), S&L-site design personnel, and S&L-Chicago design personnel relative to the control of design changes. This inspection was performed at the site (Zimmer) and, based on the information obtained at the site, continued at the S&L-Chicago office. The issues discussed below were identified in the 82-01 report:

- a. It could not be determined if the licensee signoff blanks on DDC's were being properly completed.

Based on a review of licensee documentation, it appears the licensee requirements are being met. It was noted that the cognizant engineer's signature is not required in cases where the DDC is initiated by the Generation Construction Group.

- b. S&L approves DDC's affecting vendor design documents, then the DDC is closed out. Because of S&L's limited responsibilities in the procurement area, there is no assurance that the vendor documents are being revised.

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S&L-Chicago stated that they are not responsible for assuring that vendor documents are revised, they only approve DDC's affecting vendor documents; then send the DDC's to the site for processing by the licensee. Since S&L has no responsibility for assuring the revision of vendor documents, the licensee must assure that either the documents are revised or a permanent system is established to track the outstanding DDC's to the applicable vendor documents. This item will be referred to NRC Region III for followup, as applicable.

- c. Some DDC's receive preliminary approval by S&L-site design personnel and construction proceeds based on this approval. A final approval by S&L-Chicago for some DDC's is not received for 6 months to 1 year later. More timely, final approval is indicated if construction is proceeding based on a preliminary approval.

S&L-Chicago has addressed the above concern by issuing a revision to Project Instruction PI-ZI-2.1 (Revision 16, dated October 25, 1982). Revision 16 requires final approval within 90 days from receipt of the DDC in the S&L-Chicago office. In addition, Revision 16 also provides clarification of required engineering review and approval signatures by the S&L-Chicago office, and places restrictions on S&L-site design group approval signatures for irreversible construction changes.

- d. A log of DDC's for the electrical discipline is being maintained by the licensee and it does not appear the log is being updated on a regular basis.

The inspection at the site revealed the licensee has not accepted responsibility for maintaining a DDC log for the S&L electrical discipline. The log being used by the S&L electrical discipline was being generated by the licensee's construction contractor for their own use.

The area of inspection at S&L-Chicago included a review of the S&L structural, mechanical, and electrical discipline DDC logs. The logs and the DDC records for all three disciplines were reviewed for the following: (1) comparison of the licensee construction contractor generated log with the S&L logs, (2) comparison of the DDC's received by S&L and the DDC's listed in the S&L logs, and (3) comparison of the DDC status shown in the S&L logs with the status shown on the DDC. The inspection was also performed to

verify that S&L is processing DDC's as committed by Project Instruction PI-ZI-2.1, Revision 15.

This area of inspection revealed: (1) some DDC's issued at the site were not listed in the S&L logs; (2) DDC's had been received by S&L-Chicago, but were not listed in the S&L logs; and (3) the status shown on the DDC copy was not always accurately reflected in the S&L logs. In addition, some DDC's are not being incorporated into documents within the two-month time period required by PI-ZI-2.1. Two nonconformances were issued based on log discrepancies and untimely incorporation of design changes (see B.1 and B.2 above).

- e. The interface between the licensee, S&L-site design personnel, and S&L-Chicago office design personnel requires further review to determine responsibilities relating to design and design changes.

Based on a review of the licensee and S&L documentation and discussion with licensee, S&L-site, and S&L-Chicago personnel, the following paragraphs describe the DDC flow path.

Certain authorized groups in the field initiate a DDC and then route the DDC to General Construction (a licensee group). General Construction (GC) approves the DDC, then the DDC receives a number from the site Document Control Group (DCG). GC then determines whether to send the DDC to S&L-site design personnel or to send it directly to S&L-Chicago. DDC's received by S&L-site design personnel are reviewed to determine if the change specified on the DDC is within their delegated signature authority and/or capability. If not within their authority or capability, they mark it for Chicago office approval only and the DDC is sent directly to S&L-Chicago. If within their authority, the DDC is given preliminary approval and returned to the DCG, with a copy sent to S&L-Chicago. DCG will distribute the DDC onsite and the change will be made. Preliminary approval given by S&L-site design personnel allows construction to begin prior to S&L-Chicago final approval on an as-risk basis.

When the DDC is received by S&L-Chicago, it will be reviewed and either disapproved or given final approval. The DDC is then returned to the site where appropriate action will be taken by the licensee as stated on the DDC.

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In addition to S&L requirements, the following potential licensee procedural implementation problems were noted at the site: (1) one DDC had received a number and had been issued for construction without the required site approval, and (2) the Nuclear Engineering Division (NED) control file of DDC's was missing a number of DDC's. The concern here is that if NED is missing DDC's, other groups may also be missing them. The NRC Region III site representative was informed of the above problems.

3. Cable Tray Loading (Zimmer Project) - This area of inspection resulted from a Region III request for a generic review of the process used by S&L to determine if specific cable tray weight load calculations are required.

S&L uses a "design index" number of 1.25 which relates to approximately 50% tray fill to require the performance of a weight calculation. They also limit/control routing in those areas which approach or exceed the specified design index. Region III believes that the design index number does not have a direct relationship to the cable weight and that the process being used may not be conservative.

S&L has performed calculations for all cable tray points exceeding a design index of 1.0 on the Zimmer Project and more of the points exceed the allowed weight limit. During the review of these calculations, a nonconformance (B.3 above) was identified relative to the failure of the electrical group to consider the weight of the cable trays in the total tray support loading limit. S&L has committed to perform weight calculations for all cable tray points down to a design index of 0 on the Zimmer Project, and they assert that the design index of 1.25 does provide reasonable assurance (based on experience and previous data recorded) that the allowed cable tray loading will not be exceeded. The data reviewed during this inspection appears to show that the process being used is conservative, but this item will remain open pending the review (during the next NRC inspection) of the weight calculations to be performed on the Zimmer Project.

4. Fire Protection System - An NRC Region III report stating the fire protection (FP) system in the cable spreading room at the Zimmer Project was upgraded in 1979 to be installed in seismic supports without evidence of quality assurance or calculations by S&L.

S&L could not produce any evidence that would indicate calculations were performed for the modification to the FP system. S&L claimed that, even though no evidence exists, calculations were performed prior to installing permanent system modifications. In 1979, the FP system was

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classed as a nonsafety system and there were no S&L procedural requirements for maintaining calculations for this classification of systems.

Documentation examined during this inspection revealed: (1) S&L reviewed the FP system drawing (23380, Sh 16 and 17) submitted by the contractor (Grinnel Fire Protection Systems) in February 1978, and noted on the drawing that the system should be supported by temporary pipe hangers until S&L could issue a drawing detailing the construction and installation of the permanent supports; (2) S&L issued a drawing (M-426, Sh 20) in March 1978 to provide instructions for construction and installation of permanent supports (the drawing was reviewed by the mechanical, electrical, and structural disciplines); (3) in December 1979, S&L produced new design spectra curves for the Zimmer Project, which required all seismic supports in the plant be rechecked, including the supports in the FP system; (4) in 1981, a walkdown of the as-built FP system was performed at the site, and a calculation (EMD-033384) was done to verify the system supports would meet seismic-qualification requirements; and (5) in January 1982, the drawing (M-426, Sh 20) showing the construction and installation of the supports was reissued to provide additional details; i.e., show the as-built system.

The support drawing (M-426, Sh 20) issued in March 1978 was compared with the drawing revision issued in January 1982 to determine if any differences between the two existed. No differences in the basic design or installation location for the supports were noted. Based on this comparison, it appears that S&L did perform calculations for the original FP system support design and location. In addition, documents were provided by S&L that indicated QC had reviewed the original support design drawing.

In 1981, S&L instituted a new system classification program. Systems are now classified as safety, nonsafety seismically-designed, and nonsafety. This program replaced the old classification system of safety or nonsafety. The new program imposes the same QA record retention requirements for nonsafety seismically-designed systems as is required for safety systems. This new program should preclude recurrence of the record retention problem described above.

No nonconformances or unresolved items were identified.

5. Public Service Indiana (PSI) 10 CFR 50.55(e) Report - The report states procedures did not require specification/design changes to be contractually imposed on suppliers or contractors.

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A review of the scope of work document between PSI and S&L for Marble Hill, Units 1 and 2, indicates that procurement and construction administration is the responsibility of PSI; therefore, S&L's procedures were not affected by the 50.55(e) report. No nonconformances or unresolved items were identified. This item is considered closed at S&L.

6. Electrical Separation Requirements (Zimmer Project) - This area of inspection resulted from a 10 CFR Part 50.55(e) report which stated that the S&L installation specification did not contain adequate electrical separation criteria and consequently that certain separation criteria were not being met. The problem appears to be relative to conduit that is being field routed by the site General Contractor. S&L has taken action to provide additional instructions or clarifications on electrical separation, but the basic problem appears to be a misunderstanding of the S&L design process. S&L has a project instruction which provides for a final review of separation requirements with the intent to identify and resolve all problem areas. Zimmer appears to be unique in that S&L does not dimension conduit drawings; therefore, a field walkdown would be required to verify separation. S&L has initiated steps to begin this review on Zimmer and it appears that this review will address all areas of concern. This item will remain open pending further review of the S&L design process with regard to electrical separation on other projects and to complete the evaluation of action taken on the Zimmer Project.
7. Training - The purpose of this area of inspection was to verify:
(1) each S&L engineering discipline (mechanical, electrical, and structural) had issued procedures required by GQ-16.03 (Design Errors and Deficiencies) to control the reporting, documentation, and correction of errors and deficiencies in S&L design documents;
(2) quality assurance had revised GQ-18.01 (Internal Audits) to eliminate procedural deficiencies; and (3) appropriate site and office personnel had been trained on the requirements of GQ-16.03 as committed in response to an NRC inspection (99900507/81-02).

All departments have issued procedures (electrical: ESI-254; structural: SAS-7, SAS-22, SAS-27, SAS-28, and SAS-40; and mechanical: MAS-26) to comply with the requirements of GQ-16.03. GQ-18.01 has been revised to eliminate procedural deficiencies. Records and documentation were reviewed to verify appropriate personnel had been trained. It is concluded from this review that S&L has implemented the program as committed.

Scope/Module ZIMMER SITE (S&L)
DESIGNDOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	8	SARGENT & LUNDY FIELD ORGANIZATION FOR ZIMMER STATION		REV. 17
2	3	CG&E OWNERS PROJECT PROCEDURES 3.2 - DESIGN DOCUMENT CHANGES	4-19-82	REV. 3
3	3	S&L PI-ZI-2.1 PREPARATION AND REVIEW AND APPROVAL OF DESIGN DOCUMENT CHANGE NOTICES	10-1-81	REV. 15
4	3	PROCEDURE GCP-1 DESIGN DOCUMENT CHANGES	5-12-82	REV. 1
5	8	THE DOCUMENT CONTROL REGISTER REPORT. OPEN DDC#	10-19-82	
6	8	DDC NO. M11703 HANGER DESIGN CHANGE	5-7-82 SITE APP.	REV. B
7	8	DDC NO. M11720 "	12-11-81	REV. A
8	8	DDC NO. M11726 "	11-28-81	
9	8	DDC NO. M11736 "	12-6-81	
10	8	DDC NO. SLM-671 "	10-12-81	
11	8	DDC NO. SLM-674 "	5-15-81	
12	8	DDC NO. SLM-690 "	5-26-82	REV. D
13	8	DDC NO. E-750 "	2-7-77	
14	8	DDC NO. E-771 "	3-17-77	
15	8	DDC NO. E-2116R-1 ELEC WIRING	12-19-77	

Document Types:

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
| 3. Procedure | 7. Letter |
| 4. QA Manual | 8. Other (Specify-if necessary) |

Columns:

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| 1. Sequential Item Number |
| 2. Type of Document |
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| 4. Revision (If applicable) |

Inspector D. CHAMBERLAIN
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DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
16	8	DDC E-7010 WIRING	5-12-80	
17	8	DDC E-7020 WIRING/LOGIC	5-12-80	
18	8	DDC E S-3078 EXPANSION BOLT SPACING	3-26-82	REV. A
19	8	DDC E-224 CONDUIT SUPPORT	4-19-76	REV. A
20	8	PDC E-328 CONDUIT SUPPORT	10-21-81	REV. A
21	8	DDC E-7797 WIRING	5-11-82 VOID	
22	8	DDC E-7842 CONDUIT WEIGHT	7-9-82	
23	8	DDC E-7943 WIRING	8-27-82	
24	8	DDC E-7968 CONDUIT SUPPORT	9-15-82	
25	8	DDC E-7501 CONTROL CABLE	10-14-81	
26	8	DDC E-7510 WIRING PULL BOX STATOR TEMP. BOX	9-23-81	
27	8	DDC E-7571 WIRING	12-2-81	
28	8	DDC E-7635 ELIMINATE ALARM	1-14-82	
29	8	DDC E-7663 CABLE TRAY	2-1-82	
30	8	DDC M-5236 PLUG POSITION	8-6-81	REV. B
31	8	DDC M-5275 PIPING	7-24-81	REV. A
32	8	DDC M-5430 PIPING ELEVATION	12-11-81	

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DESIGNDOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
33	8	DDC M-5509 WELD COUPLING	3-10-82	REV. A
34	8	DDC M-5513 PIPE REROUT	4-12-82	REV. B
35	8	DDC M-5556 LINE CHANGE	3-19-82	
36	8	DDC M-5572 IMPLEMENT ECR	4-7-82	
37	8	DDC M-5631 AS BUILT PIPING	5-11-82	
38	8	DDC CM-11 OFF GAS SYSTEM	7-1-82	
39	8	DDC CM-25 CONTROL ROD DRIVE SYSTEM	8-10-82 DISAPPROVED	
40	8	DDC CM-34 II	8-30-82	REV. A
41	8	DDC CM-41 SCRAM VENT LINE HANGER	8-19-82	
42	8	DDC M-5590 LOW PRESSURE CORE SPRAY	9-23-82	REV. B
43	8	DDC M-5610 RESIDUAL HEAT REMOVAL	5-19-82	
44	3	PROJECT INSTRUCTION PI-2I-30.1 RESPONSIBILITIES AND ORGANIZATION FOR SARGENT & LUNDY SITE PERSONNEL	2-19-82	REV. 3
45	8	DDC CE-01 ELECT. INST. CRD UNITS	9-2-82	

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scope/Module DESIGN CHANGE
CONTROL (SALCHICAGO)

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	3	GENERAL QUALITY ASSURANCE MANUAL ~ PROJECT STATUS REPORTS ~ GG-3.12	3/13/79	3
2	3	PROJECT INSTRUCTION ~ ZIMMER NPS ~ PI-2I-2.1 ~ PREPARATION AND REVIEW AND APPROVAL OF DESIGN DOCUMENT CHANGE NOTICES	10/1/81	15
3	3	SAME AS ITEM 2 (ABOVE)	10/25/82	16
4	8	STRUCTURAL JDC STATUS REPORT	10/25/82	—
5	1	REACTOR BUILDING SECTIONS AND DETAILS ~ DWG A-294	9/30/82	V
6	1	PRIMARY CONTAINMENT DRYWELL PLANS	8/7/81	AF
7	1	SAME AS ITEM 6 (ABOVE)	8/16/82	AS
8	1	SCHEMATIC DIAGRAMS FOR VARIOUS SYSTEMS ~ E-1010 SERIES	—	—
9	2	ELECTRICAL INSTALLATION WORK - PHASE II ~ No: H-2173	4/2/82	Supp 10
10	8	JDC STATUS REPORT ~ TURNOVER COORDINATION GROUP GENERATED BY KAISER ENGINEERING	5/17/82	—

Document Types:
1. Drawing
2. Specification
3. Procedure
4. QA Manual

5. Purchas Order
6. Internal Memo
7. Letter
8. Other (Specify-If necessary)

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CONTROL (S&L CHICAGO)DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
11	8	DDC STATUS REPORT FOR ELECTRICAL DISCIPLINE	10/23/82	—
12	8	DDC STATUS REPORT FOR STRUCTURAL DISCIPLINE	10/25/82	—
13	8	DDC STATUS REPORT FOR MECHANICAL DISCIPLINE	10/8/82	—
14	2	ERECTION OF PHASE II PIPING SYSTEMS AND MECHANICAL EQUIPMENT ~ NO: H-2256	7/19/82	Supp 25
15	1	RESIDUAL HEAT REMOVAL SYSTEM SINGLE LINE PIPING ~ NO: M-433	—	—
16	8	DDC RECORDS ~ S-2401 THRU S-2799; S-2894 THRU S-3299; S-2520 THRU S-2893; S-3300 THRU S-3799 ~ E-7001 THRU E-7200; E-7401 THRU E-7640; E-6781 THRU E-7000; E-4201 THRU E-4600; E-4601 THRU E-5099 ~ M-5425 THRU M-5599; M-4800 THRU M-7999	—	—

Document Types:

1. Drawing
2. Specification
3. Procedure
4. QA Manual
5. Purchas Order
6. Internal Memo
7. Letter
8. Other (Specify-if necessary)

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Scope/Module FOLLOW UP - CABLE
TRAY LOADING (ZIMMER)DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	3	EDSB-126 ELECTRICAL DRAFTING REFERENCE FOR CABLE INFORMATION SYSTEM CIS-3	10-5-79	
2	3	EDSB-127 ELECTRICAL DRAFTING REFERENCE FOR CABLE INFORMATION SYSTEM CIS-4 INPUT	12-24-80	
3	1	E-236 CABLE RTG. - AUXILIARY BUILDING	3-1-82	REV. F
4	8	WORKSHEET TABULATION - ROUTING POINTS OVER 1.25 ZIMMER N.P.S CG&E	?	
5	8	CABLE PAN LOADING CHECK - RUN 154	9-30-82	
6	8	CERAMIC FIBER BLANKET WRAP FOR FIRE PROTECTION OF CABLE TRAYS AND CONDUITS	1980	
7	3	PI-LS-14 CABLE TRAY LOADING DESIGN INDEXES LASALLE	10-18-82	REV 3
8	8	4266/19-BC21 ALLOWABLE STATIC LOADS FOR CABLE TRAY SECTIONS	2-22-82	
9	8	4266-19BC33 CABLE TRAY AMPACITY (1514R)	6-4-82	
10	8	4266/19-BC2 CABLE PAN OVERLOAD (1514R)	8-6-81	
11	8	4266/19-BC1 CABLE PAN OVERLOAD (1129R)	8-6-81	

Document Types:

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Scope/Module FOLLOW UP - CABLE
TRAY LOADING (ZIMMER)DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
12	3	EEP-14-MH PROCEDURE FOR THE CONTROL OF CABLE TRAY LOADING (MARBLE HILL)	7-16-82	REV. 1
13	3	PI-CP-029 PROCEDURE FOR THE CONTROL OF CABLE TRAY LOADING (CLINTON)	5-7-82	REV. 1
14	8	REC 42381 CABLE TRAY ROUTING POINT WEIGHT CALCS - (TRAYS W/ P.I. ≥ 1.25)	5-14-81	
15	8	FSAR SECTION 3.10.1.2.3 CABLE TRAY, WIREWAY, CONDUIT AND CABLE BUS SUPPORT CRITERIA (ZIMMER)	7/82	REV. 86
16	3	PI-ZI-10.1 RESOLUTION OF DESIGN INDEXES EXCEEDING 1.25 FOR CABLE ROUTING POINTS (ZIMMER)	9/25/81	REV. 3

Document Types:

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Scope/Module FOLLOW UP - FIRE PROTECTION SYSTEM (ZIMMER)

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	8	FORMAL PIPING STRESS ANALYSIS ~ CABLE TRAY ROOM IN AUX BLDG ~ FIRE PROTECTION SYSTEM # FP-04 ~ ACCESSION NO.: EMD-033384	11/3/81	-
2	8	SAME AS ITEM 1 (ABOVE)	9/24/82	ADD. A
3	1	CABLE SPREADING ROOM - PREPARED BY GRINNEL FIRE PROTECTION SYSTEMS ~ NO: 23380 SHT 16 & 17 ~ SHT 16: CEILING SPRINKLER PIPING ~ SHT 17: IN-TRAY PIPING PLAN	SH 16 ~ 5/25/77 SH 17 ~ 1/3/77	0 0
4	1	SAME AS ITEM 3 (ABOVE)	SH 16 & 17 - 2/14/78	3
5	1	FIRE PROTECTION SYSTEM HANGER SCHEDULE - AUX BLDG ~ NO: M-426 SHT 20	3/29/78	A
6	1	SAME AS ITEM 5 (ABOVE)	1/11/82	B
7	3	FINALIZING PIPING ANALYSIS, HANGER AND RESTRAINT DESIGN AND SUPPORT LOADING ~ PI-2I-13.1	2/12/79	1
8	8	DOCUMENT TRANSMITTAL AND DISTRIBUTION FORM ~ NO: 1117	4/3/78	-

Document Types:

- 1. Drawing
- 2. Specification
- 3. Procedure
- 4. QA Manual
- 5. Purchas Order
- 6. Internal Memo
- 7. Letter
- 8. Other (Specify-If necessary)

Columns:

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- 3. Date of Document
- 4. Revision (If applicable)

Inspector HARRELL

Scope/Module Follow up - CHANGES
NOT BEING IMPOSED ON
VENDORS OR CONTRACTORS
(MARBLE HILL)

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	8	PROJECT SCOPE OF WORK FOR MARBLE HILL NUCLEAR GENERATING STATION ~ SECTION II - SCOPE OF RESPONSIBILITY	2/3/82	7

- Document Types:
1. Drawing
 2. Specification
 3. Procedure
 4. QA Manual
 5. Purchas Order
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Inspector D. CHAMBERLAIN

Docket No. 99900507
 Report No. 82-02
 Page 1 of 1

Scope/Module ACTION ITEM - ELEC. SEPARATION (ZIMMER)

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	1	E-280 RACEWAY SEGREGATION CHART	9-21-82	REV. B
2	8	AS1-60 DESIGN CRITERIA FOR CABLE INSTALLATION DESIGN CRITERIA (ZIMMER)	12-30-81	REV. 2
3	3	PI-ZI-18.1 DESIGN REVIEW OF PHYSICAL SEPARATION OF MECHANICAL, ELECTRICAL, AND INSTRUMENTATION EQUIPMENT	8-9-82	REV. 1
4	8	H-2173 SUPP. 7 ELECT. INSTALLATION SUPP 10 LATEST 4-2-82	1-12-81	
5	8	ESO-295 ELECTRICAL DRAWING DESIGN & REVIEW GUIDES FOR ELECTRICAL INSTALLATION DRAWINGS	10-1-82	

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 3. Procedure
 4. QA Manual

5. Purchas Order
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Inspector SAKOWSKI
 Scope/Module TRAINING

DOCUMENTS EXAMINED

1	2	3	4
	TITLE/SUBJECT		
1	ESI-254 ELECTRICAL DEPARTMENT PROCEDURE FOR REPORTING AND CORRECTION OF DESIGN ERRORS AND DEFICIENCIES IN APPROVED DESIGN DOCUMENTS	8-7-81	REV. 1
2	GQ 16.01 CORRECTIVE ACTION REPORTS	9-23-81	REV. 5
3	GQ 16.03 DESIGN ERRORS AND DEFICIENCIES ELECTRICAL DEPT. PERSONNEL TRAINING LOG (PHYSICAL + WIRING)	12-22-81	REV. 1
4	ELECTRICAL DEPT. PERSONNEL TRAINING TESTS		
5	MAS-26 MECHANICAL DEPARTMENT STANDARD, PROCEDURE FOR REPORTING AND CORRECTING DESIGN ERRORS AND DEFICIENCIES IN APPROVED DESIGN DOCUMENTS	6-22-81	
6	NUCLEAR PROJECTS MEETING, MECHANICAL DEPT., VI SPECIAL TOPICS: DISCUSSION OF MAS-26 (GQ 16.03) - TRAINING OF SUPERVISORS AND PROJECT ENGINEERS	7-24-81	
7	NOTES OF HVAC DIV MEETING NO. 81-7 HELD BY W.H. MILLER ON JULY 1, 1981 (MEMO DISTRIBUTED TO 34 SUBORDINATE ENGINEERS DISCUSSING MAS-26)	7-31-81	
8			

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DOCUMENTS EXAMINED

Inspector SAKOWSKI
 Scope/Module TRAINING

1	2	TITLE/SUBJECT	3	4
9	6	NOTES OF HVAC DIV. MEETING NO. 81-11 HELD BY W. H. MILLER ON NOV. 4, 1981 (MEMO DISTRIBUTED TO 34 SUBORDINATE ENGINEERS DISCUSSING MAS-26)	1-8-82	
10	3	SAS 22: PREPARATION, REVIEW, AND APPROVAL OF STRUCTURAL DEPARTMENT DESIGN CALCULATIONS	6-3-81	
11	3	SAS 27: PREPARATION, REVIEW, AND APPROVAL OF STRUCTURAL AND CIVIL DRAWINGS (NORAS-26)	6-3-81	R1:12-16-81
12	3	SAS 28: PREPARATION, REVIEW, AND APPROVAL OF ARCHITECTURAL AND PLUMBING DESIGN DRAWINGS (NORAS-27)	6-3-81	R3:9-4-82
13	3	SAS 7: PREPARATION, REVIEW, AND APPROVAL OF THE PROJECT STRUCTURAL DESIGN CRITERIA		R2:5-24-82
14	3	SAS 40: REVIEW OF SAFETY RELATED STRUCTURAL PROJECT SPECIFICATIONS (NORAS - 28)	5-20-80	R1:6-3-81
15	8	TRAINING FILE IV-A (SD113) STRUCTURAL DEPT. TRAINING FILE		

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DOCUMENTS EXAMINED

Inspector SALCOWSKI
 Scope/Module TRAINING

1	2	TITLE/SUBJECT	3	4
16	3	GQ 18.01 INTERNAL AUDITS	7-15-81	R40: 7-15-81
17	3	GQ 18.02 QUALIFICATION OF AUDITORS		R-5: 4-2-82
18	8	T-6B QA TRAINING SESSION ATTENDANCE RECORDS	8-6-81	
19	8	T-6B QA TRAINING SESSION ATTENDANCE RECORDS	8-12-81	

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