UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 6, 1992

Docket No. 50-244

LICENSEE: Rochester Gas and Electric Corporation

FACILITY: R. E. Ginna Nuclear Power Plant

SUBJECT: SUMMARY OF MEETING WITH ROCHESTER GAS AND ELECTRIC CORPORATION ON STEAM GENERATOR REPLACEMENT, SEPTEMBER 16, 1992 (TAC NO. M84004)

Rochester Gas and Electric Corporation (RG&E), in a Nuclear Regulatory Commission (NRC) meeting on September 16, 1992, at NRC Headquarters, presented their current plans for steam generator (SG) replacement at the Ginna plant. RG&E made the decision to continue nuclear power generation with the Ginna plant in mid June 1992, when filing a report with the New York State Public Service Commission. RG&E has been actively exploring procurement options since early July 1992, and determining costs and risks since early August 1992. RG&E's decisions to date are a result of their Integrated Resource Plan (IRP), which includes a conservative 15-year plan to the expiration of the Ginna operating license in September 2009. A copy of the meeting agenda and discussion material is included in Enclosure 2. Enclosure 1 is a list of meeting attendees.

RG&E's final decision however, to procure new SGs is targeted for sometime before the end of December 1992 (two bidders, Westinghouse and Babcock and Wilcox). RG&E's schedule would then include SG fabrication from January 1993 to January 1996, preliminary engineering and preparation for plant design/installation from January to June 1993, detail design engineering from July 1993 to January 1995, pre-outage modifications from March 1995 to February 1996, and SG installation from March to June 1996.

The major issue presented by RG&E in the September 16th meeting was SG replacement by new SGs, including SG transport, containment integrity, SG drop potential, effects on UFSAR/Technical Specifications, ALARA, and acceptance testing/examinations. RG&E also discussed the status of their existing Westinghouse Series 44 (Inconel 600) SGs.

RG&E discussed their evaluation of two potential options for SG replacement: (1) one-piece (full SG assembly) through the containment dome, and (2) two piece (steam drum separated from the "U" tube bundle) through the equipment hatch. Options applicable to other plants were not applicable for the Ginna plant. RG&E's current preference is one-piece SG replacement through the containment dome opening directly over each of two existing SG locations. RG&E's preference is based on minimizing containment handling and movement, shorter outage schedule (74 vs 84 days), less expensive, less radiation exposure (300 man-rem vs 400 man-rem), and installation of a full shop assembly. The removal and replacement would be accomplished using a large mobile crane. RG&E went on to discuss the potential containment roof construction openings, SG rigging and liner plate reinstallation weld details.

RG&E also discussed using principally a 10 CFR 50.59 review process (facility changes, tests and experiments conducted without prior Commission approval). RG&E discussed using a licensing approach where necessary, i.e., a license amendment per 10 CFR 50.90 and 50.91, to deal with essential Technical Specification changes, and appropriate NRC inspection/review of safety evaluations and responses to NRC questions.

Original signed by
Allen R. Johnson, Project Manager
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Enclosures:
1. List of Attendees
2. Meeting Agenda and Discussion Material

cc w/enclosures:
See next page

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OFFICE	LA: PDI-3	PM: PDI-3	PD: PDI-3		
NAME	TClark	AJohnson	WButler		
DATE	10/06/92	10/6/92	10/6/92	/ /	/ /

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   Discussion Material

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See next page

cc:

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ENCLOSURE 1

September 16, 1992

GINNA -- S.G. Replacement Meeting

List of Meeting Attendees

Name/Title	Organization	Phone No.
Al Johnson Project Manager	NRR/DRP/PD I-3	301-504-1497
Bob Mecredy, Vice President R. E. Ginna Nuclear Production	RG&E	716-724-8069
John F. Smith, Director S/G Replacement	RG&E	716-724-8863
George Wrobel, Manager Nuclear Safety & Licensing	RG&E	716-724-8070
Brian Flynn Engineer	RG&E	716-546-2700 Ext. 4805
Bill Papproth Bechtel Project Manager	Bechtel	301-417-5662
Steve Routh Project Engineer	Bechtel	301-417-5945
Lynn Connor	STS	301-652-2500
Geoff Hornseth Materials Engineer	NRR/DET/EMCB	301-504-2756
William Lazarus Section Chief	NRC-RI	215-337-5231
Tom Moslak SRI-Ginna	NRC-RI	315-524-6935
Kulin D. Desai	NRR/DST/SRXB	301-504-2835
Jim O'Brien	NRR/ADAR/PDLR	301-504-1134
Goutam Bagchi	NRR/DET/ESGB	301-504-2733
R. Rothman Section Chief	NRR/DET/ESGB	301-504-3306
Chen P. Tan	NRR/DET/ESGB	301-504-3315

ENCLOSURE 2

GINNA STATION

STEAM GENERTAOR REPLACEMENT

NRC PRESENTATION

SEPTEMBER 16, 1992

WASHINGTON, D.C.

ROBERT C. MECREDY
GEORGE J. WROBEL
JOHN F. SMITH

AGENDA

• INTRODUCTION	WROBEL
• STATUS OF EXISTING STEAM GENERATORS	SMITH
• REPLACEMENT STATUS	SMITH
• OVERVIEW OF DECISION MAKING PROCESS	MECREDY
• EVALUATION OF REPLACEMENT METHODS	SMITH
• LICENSING CONSIDERATIONS	WROBEL
• SCHEDULE	SMITH
• OPEN DISCUSSION	ALL

INTRODUCTION

- INFORMATIONAL MEETING
- DISCUSS CURRENT PLANS FOR S/G REPLACEMENT
- NO FORMAL ACTION REQUIRED BY NRC AT THIS TIME
- REPLACEMENT DECISION NOT YET MADE

STATUS OF EXISTING SERIES 44 STEAM GENERATORS

- REPAIR STATUS
- 1992 DEFECTS
- PRESSURE LOSS
- TUBE SUPPORT PLATE DEFECTS
- DEFECT PROJECTIONS

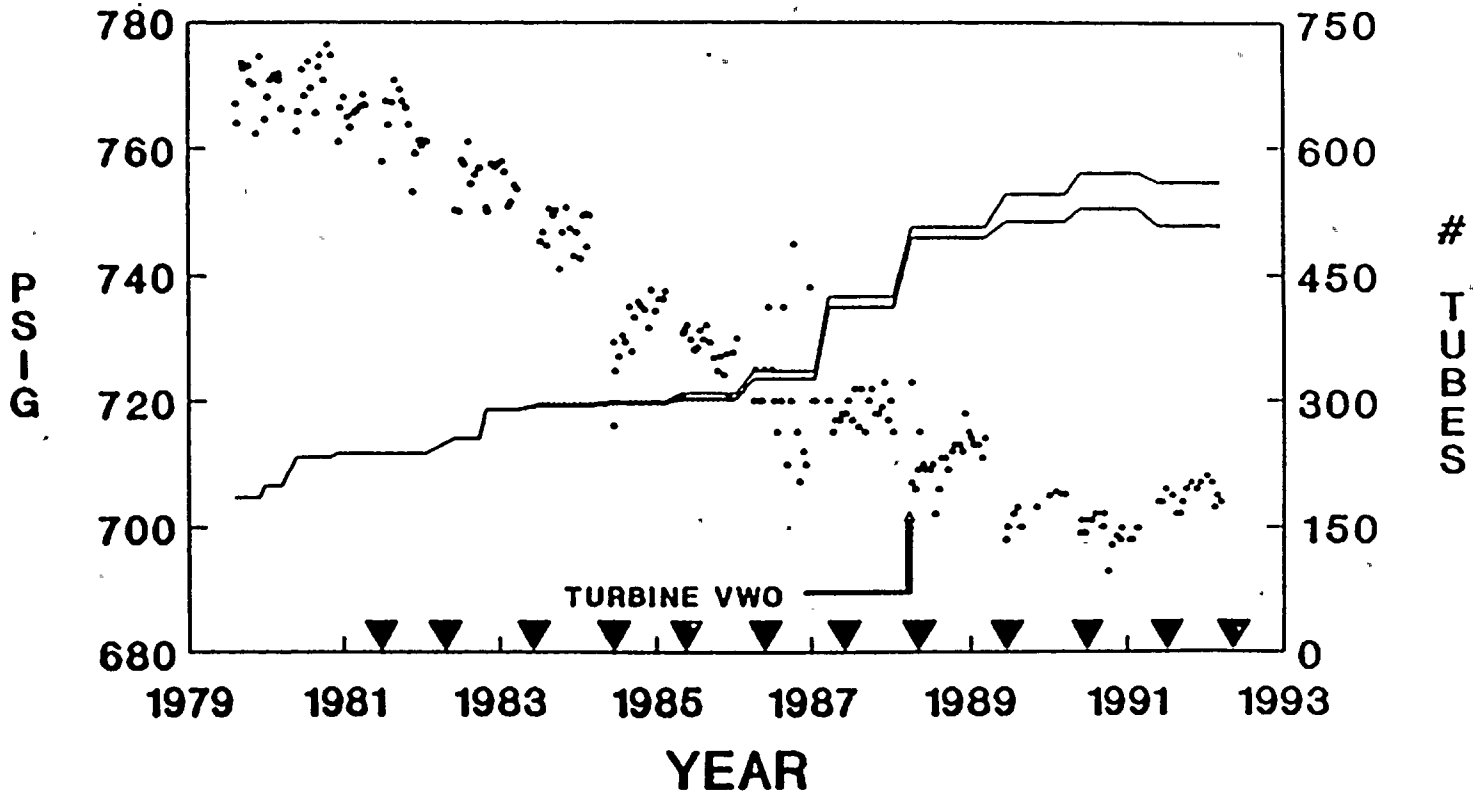
REPAIR STATUS

	S/G-A	S/G-B
UNREPAIRED TUBES	2520 (77.3%)	1813 (55.6%)
PLUGGED TUBES	185 (5.7%)	313 (9.6%)
SLEEVED TUBES	555 (17.0%)	1134 (34.8%)
	3260 (100%)	3260 (100%)

1992 DEFECTS

DEFECT TYPE	S/G-A	S/G-B
ROLL TRANSITION	189	63
CREVICE	34	118
OTHER	3	5
TOTAL	226	186

GINNA STATION
SG PRESSURE HISTORY



3/91

RGE

TUBE SUPPORT PLATE DEFECTS

- NO TSP DEFECTS FOUND TO DATE

- INSPECTION PROGRAM INCLUDES:

  - 20% FULL LENGTH BOBBIN COIL

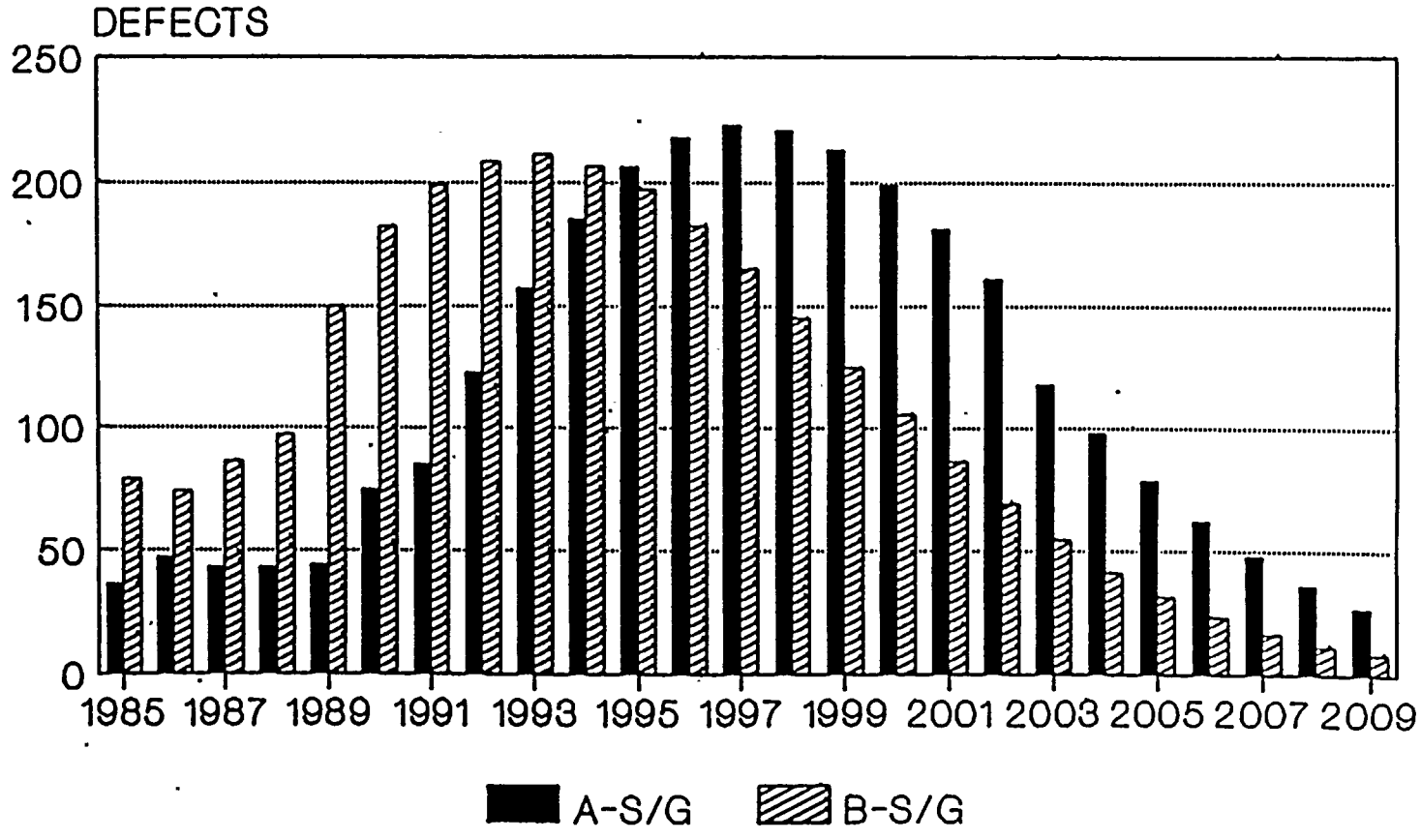
  - SELECTED MRPC INSPECTION OF TSP NO. 1 AND NO. 6

- SIGNIFICANT TSP DEFECTS

  - REDUCED OUTPUT

  - EARLY RETIREMENT

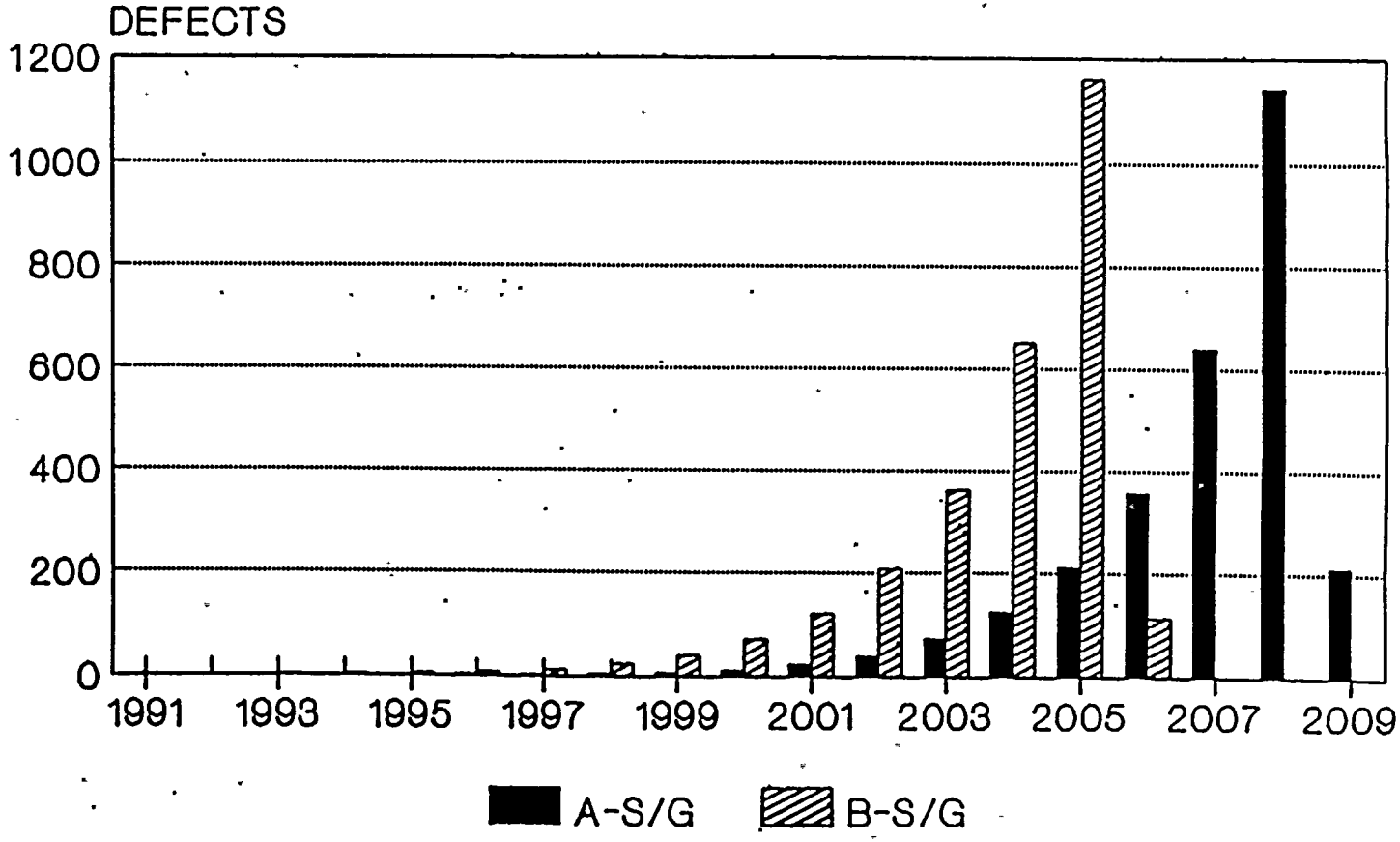
STEAM GENERATOR
TUBESHEET DEFECTS



JANUARY 18, 1991

FIGURE 9

STEAM GENERATOR
TSP DEFECTS



JANUARY 18, 1991

FIGURE 10

REPLACEMENT STATUS

- MEMBER OF STEAM GENERATOR REPLACEMENT GROUP
- BIDS RECEIVED IN JANUARY 1992
- SHORT LIST OF BIDDERS
- NEGOTIATING WITH B&W AND WESTINGHOUSE
- CURRENTLY NOT PLANNING TO UPRATE
- PLAN TO ADD ADDITIONAL SURFACE AREA
- REPLACEMENT DECISION BY 1/1/93

OVERVIEW OF DECISION MAKING PROCESS

- INTEGRATED RESOURCE PLAN
- RGE DECISION MAKING PROCESS
- COMPETITION FROM NUG'S AND IPP'S

INTEGRATED RESOURCE PLAN

Background

- electric generation planning
- long-range DSM plan
- October 1991 PSC letter
- 15 year planning period

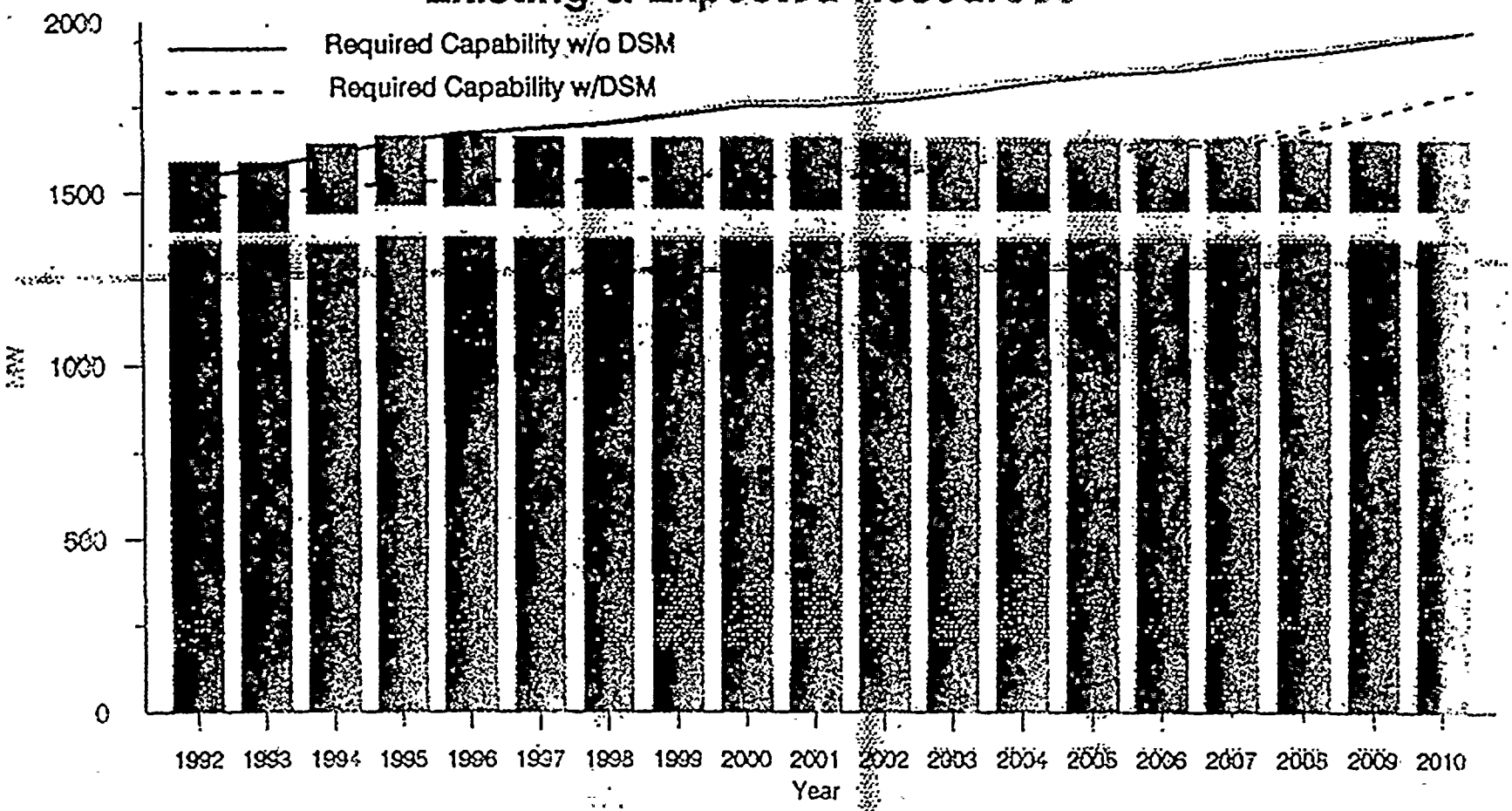
RGE

INTEGRATED RESOURCE PLAN

Business Decisions

- long-range DSM plan
- industrial customer retention
- clean air act compliance
- Ginna steam generator replacement

1991 PLAN
SUMMER LOAD & CAPACITY
Existing & Expected Resources



System	Hydro	Nuclear	Coal	Gas	Oil
Gilboa	Station 5	Ginna	Russell 1	Beebee 13	Oswego 6
Green Mountain	Station 2	Nine Mile	Russell 2	Station 9	
Hydro Quebec	Station 23	Fitzpatrick	Russell 3	Allegany Cogen	
	Miscellaneous		Russell 4		
	Niagara		Beebee 12		

3/9/92/SUM-LOAD/ewo

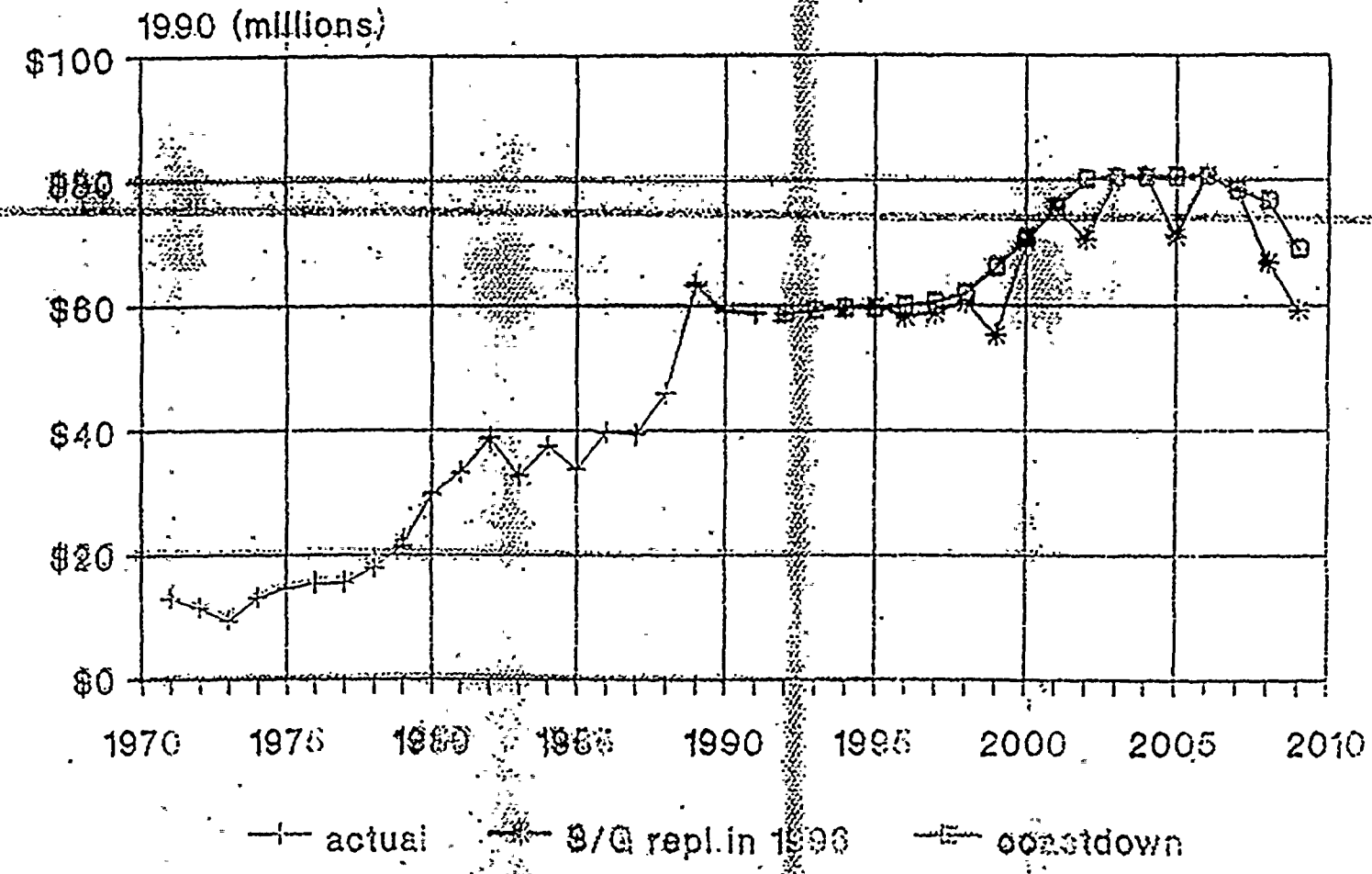
INTEGRATED RESOURCE PLAN

Existing Plant Options

Beebee 1-2	Russell 1-2	Russell 3-4	Ginna 1
low S coal	low S coal	low S coal	operate
scrubbers	scrubbers	scrubbers	replace SG
repower	repower	repower	
retire	retire	retire	retire

GINNA IFP INPUT

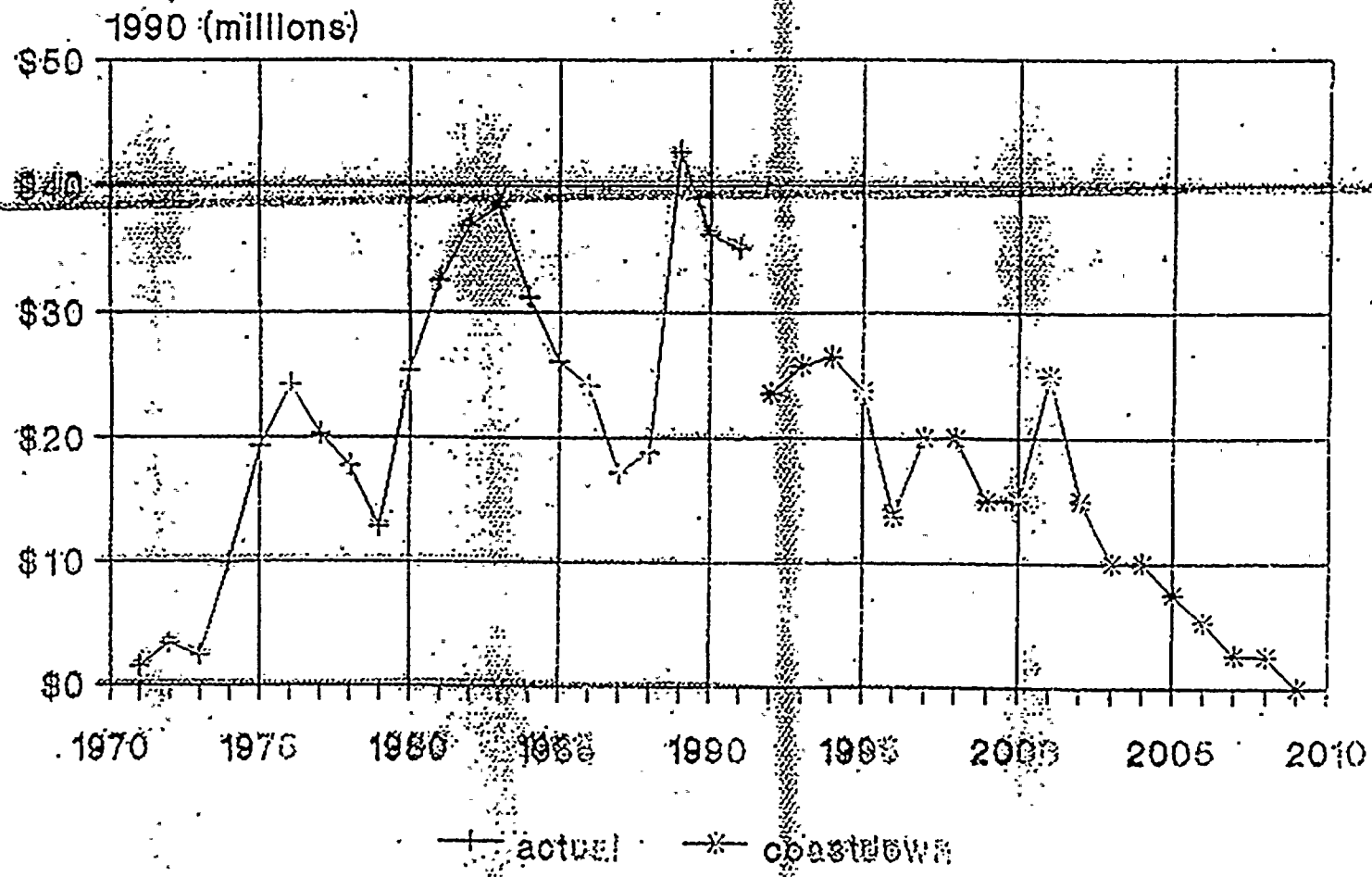
Non-Fuel Production Expense



= charges to Ginna production accounts

GINNA IRP INPUT

Annual Capital Expenditures



= does not include S.G. replacement

INTEGRATED RESOURCE PLAN

Alternatives

- new coal-fired generation
- new gas-fired generation
- cogeneration technologies
- increased demand side management
- long-term capacity contracts

INTEGRATED RESOURCE PLAN

Business Climate

- industry regulation
- limited growth opportunities
- environmental concerns
- technological changes

RGE

INTEGRATED RESOURCE PLAN

Proposed IRP

Ginna	DSM	Russell 1-2	Russell 3-4
continue operation and decide steam gen replace	base 140 MW	low sulfur coal 2000 or natural gas or retire	low sulfur coal 2000

RGE

INTEGRATED RESOURCE PLAN

Proposed IRP

Beebee 1	contract	cogeneration	new gas
retire by 2000	no new	up to 186 Mw	80 CT 2009
but retain site			or 80 CT 2007

RGE

INTEGRATED RESOURCE PLAN

Action Items - Ginna Steam Generators

- explore procurement options — 07/01/92 ✓
- determine costs and risks — 08/01/92 ✓
- replacement decision — 12/31/92 ✓

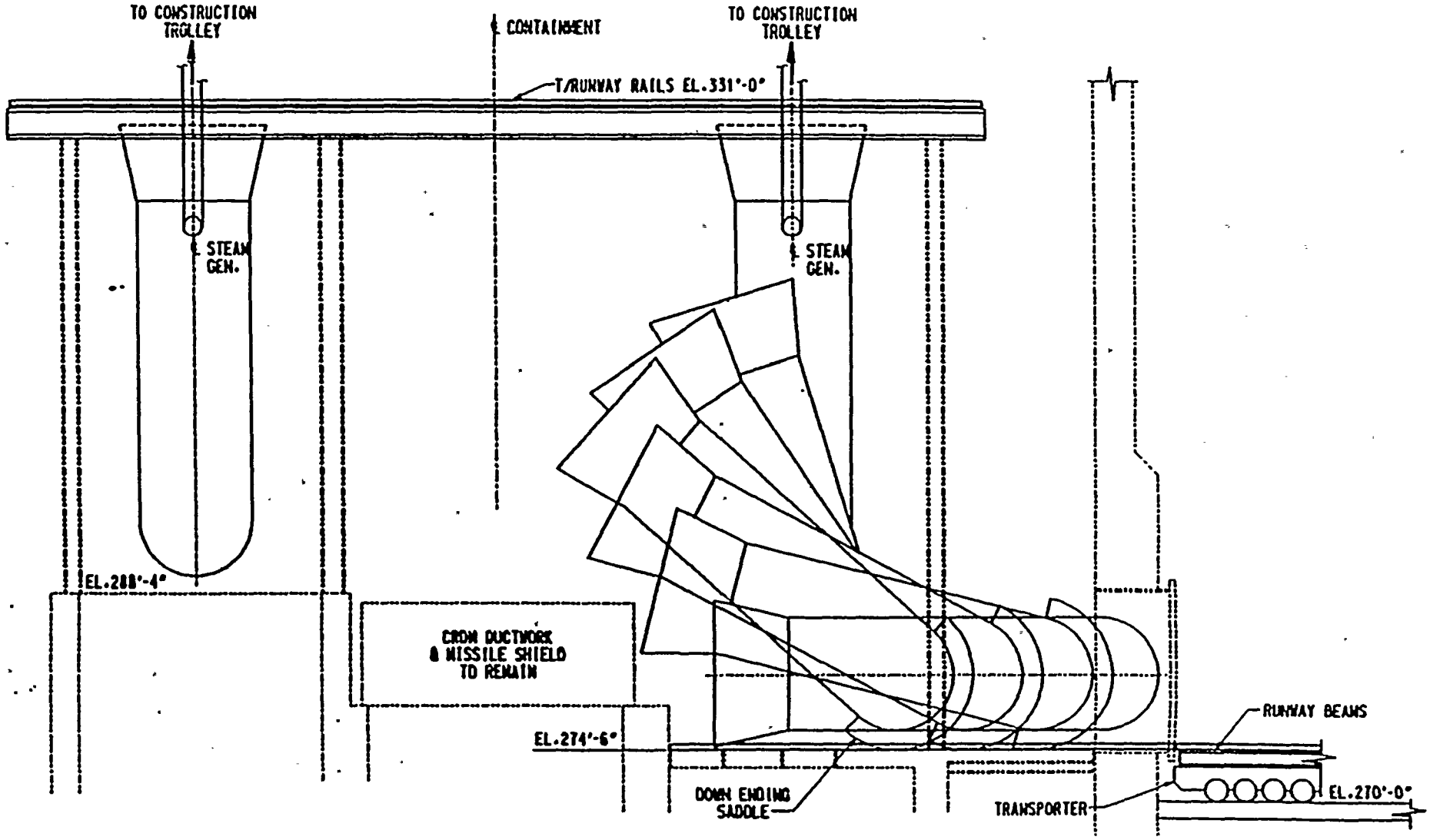
EVALUATION OF REPLACEMENT METHODS

- POTENTIAL OPTIONS
- TWO-PIECE
- ONE-PIECE
- CURRENT PREFERENCE

POTENTIAL OPTIONS

- ONE-PIECE THRU CONTAINMENT ROOF
- TWO-PIECE THRU EQUIPMENT HATCH
- ONE-PIECE THRU EQUIPMENT HATCH
- ONE-PIECE THRU CONTAINMENT WALL
- TWO-PIECE THRU CONTAINMENT WALL
- LAST THREE OPTIONS NOT FEASIBLE FOR GINNA
- OPTIONS ONE AND TWO FEASIBLE FOR GINNA

Figure 4.3.1
TWO-PIECE STEAM GENERATOR RIGGING



TWO-PIECE STEAM GENERATOR REPLACEMENT

- REMOVAL SEQUENCE

  - AUXILIARY LIFTING DEVICE INSTALLED ON TOP OF EXISTING BRIDGE CRANE
  - VESSELS SEVERED AT TRANSITION CONE AND RCS NOZZLES
  - EVALUATE THE NEED FOR PIPING RESTRAINTS
  - STEAM DRUMS REMOVED AND STORED INSIDE CONTAINMENT
  - COVER PLATES INSTALLED ON LOWER ASSEMBLY TRANSITION CONE AND ALL NOZZLE OPENINGS
  - DECON OF LOWER ASSEMBLY
  - LOWER ASSEMBLIES REMOVED THRU EQUIPMENT HATCH
  - LOWER ASSEMBLIES TRANSPORTED TO FINAL STORAGE LOCATION

TWO-PIECE REPLACEMENT CONT'D

- INSTALLATION SEQUENCE

  - APPROXIMATELY THE REVERSE OF REMOVAL
  - LOWER ASSEMBLIES MOVED FROM STORAGE LOCATION TO AREA NEAR EQUIPMENT HATCH
  - LOWER ASSEMBLIES RIGGED INTO CONTAINMENT
  - STEAM DRUMS WITH NEW MOISTURE SEPERATING EQUIPMENT RIGGED ONTO LOWER ASSEMBLIES
  - DRUM WELDED TO LOWER ASSEMBLY
  - PIPING WELDED
  - PRIMARY/SECONDARY SIDE HYDRO'S
  - INSULATION INSTALLED

ONE-PIECE STEAM GENERATOR REPLACEMENT

- ONE-PIECE S/G REPLACED THRU AN OPENING IN THE ROOF OF CONTAINMENT
- OPENING DIRECTLY OVER EACH STEAM GENERATOR
- S/G REMOVED WITH LARGE MOBILE CRANE
- REMOVAL SEQUENCE
- INSTALLATION SEQUENCE

ONE-PIECE STEAM GENERATOR REPLACEMENT CONT'D

- REMOVAL SEQUENCE

  - LAMPSON TRANSI-LIFT ASSEMBLED IN PARKING LOT AND LOAD TESTED
  - TOWER CRANE ASSEMBLED ADJACENT TO CONTAINMENT
  - TRANSI-LIFT MOVED TO AREA ADJACENT TO CONTAINMENT
  - TRANSI-LIFT POSITIONED ON SPECIALLY DESIGNED FOUNDATION
  - CONCRETE OPENINGS WIRE SAWED UP TO LINER PLATE
  - CONCRETE CHIPPED BACK TO EXPOSE REBAR
  - LINER PLATE CUT AND CONCRETE/LINER REMOVED
  - SECOND LIFTING TRUNION INSTALLED ON EACH S/G
  - S/G CONNECTED TO TRANSI-LIFT
  - PIPING RESTRAINED (IF NECESSARY) AND CUT
  - S/G REMOVED BY RAISING HOOK UNTILL S/G CLEARS CONTAINMENT
  - S/G LOWERED BY LOWERING HOOK AND RAISING BOOM
  - S/G DOWN ENDED AND LOWERED ONTO TRANSPORTER
  - S/G TRANSPORTED TO STORAGE LOCATION

ONE-PIECE STEAM GENERATOR REPLACEMENT CONT'D

- INSTALLATION SEQUENCE

  - ESSENTIALLY THE REVERSE OF THE REMOVAL PROCESS
  - PIPE WELDING THE SAME AS THE TWO-PIECE
  - VESSEL HYDROTESTED IN THE SHOP THEREFORE ONLY NEW WELDS REQUIRE TESTING IN FIELD
  - INSULATION STARTS AS SOON AS VESSELS ARE SET
  - ROOF LINER PLATE REINSTALLED AND TESTED
  - REBAR REINSTALLED
  - CONCRETE PLACED
  - STRUCTURAL INTEGRITY TEST PREFORMED

FIGURE 4.2-4

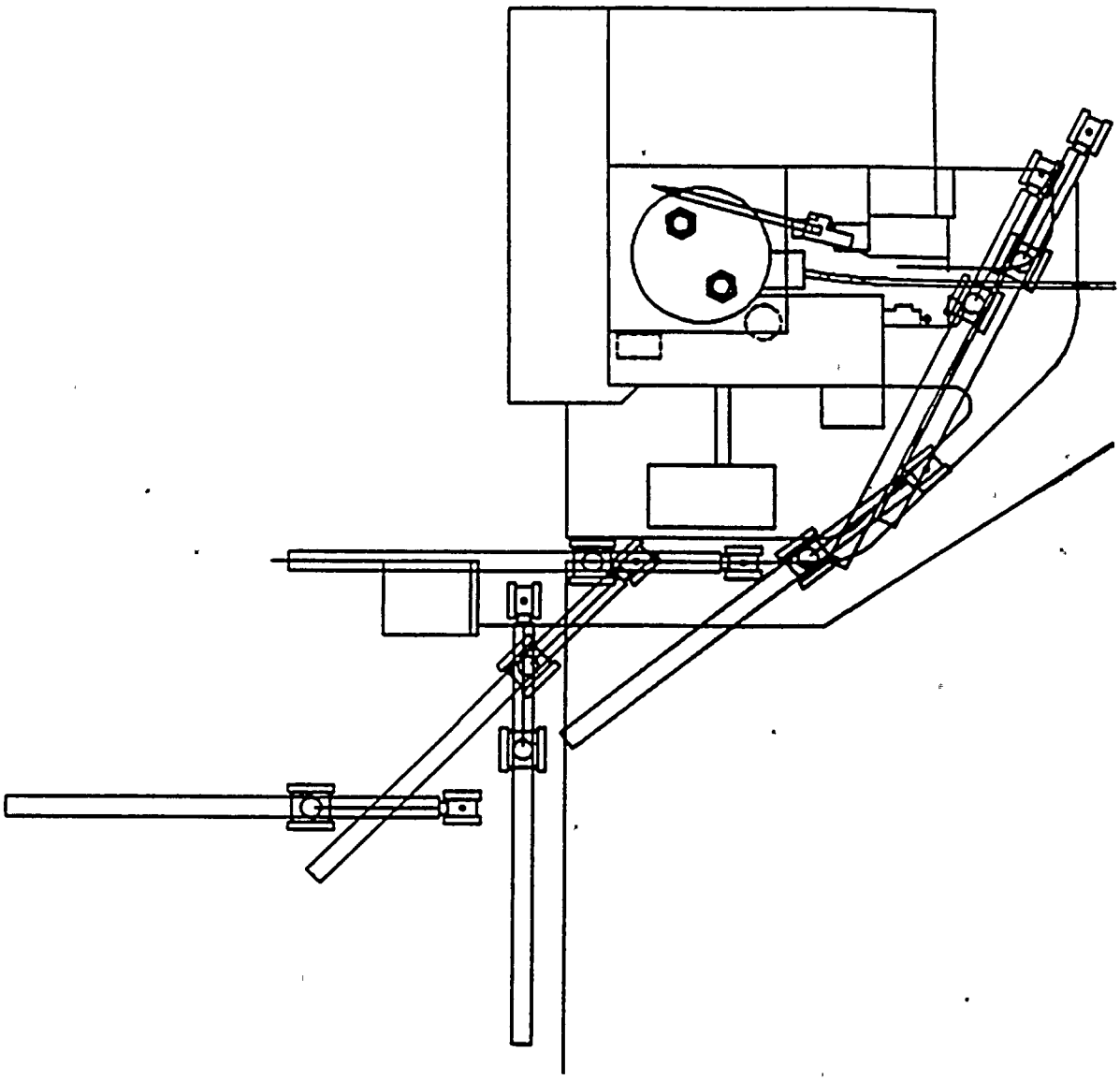


Figure 4.2.2
CONTAINMENT ROOF CONSTRUCTION OPENINGS
(Page 1 of 2)

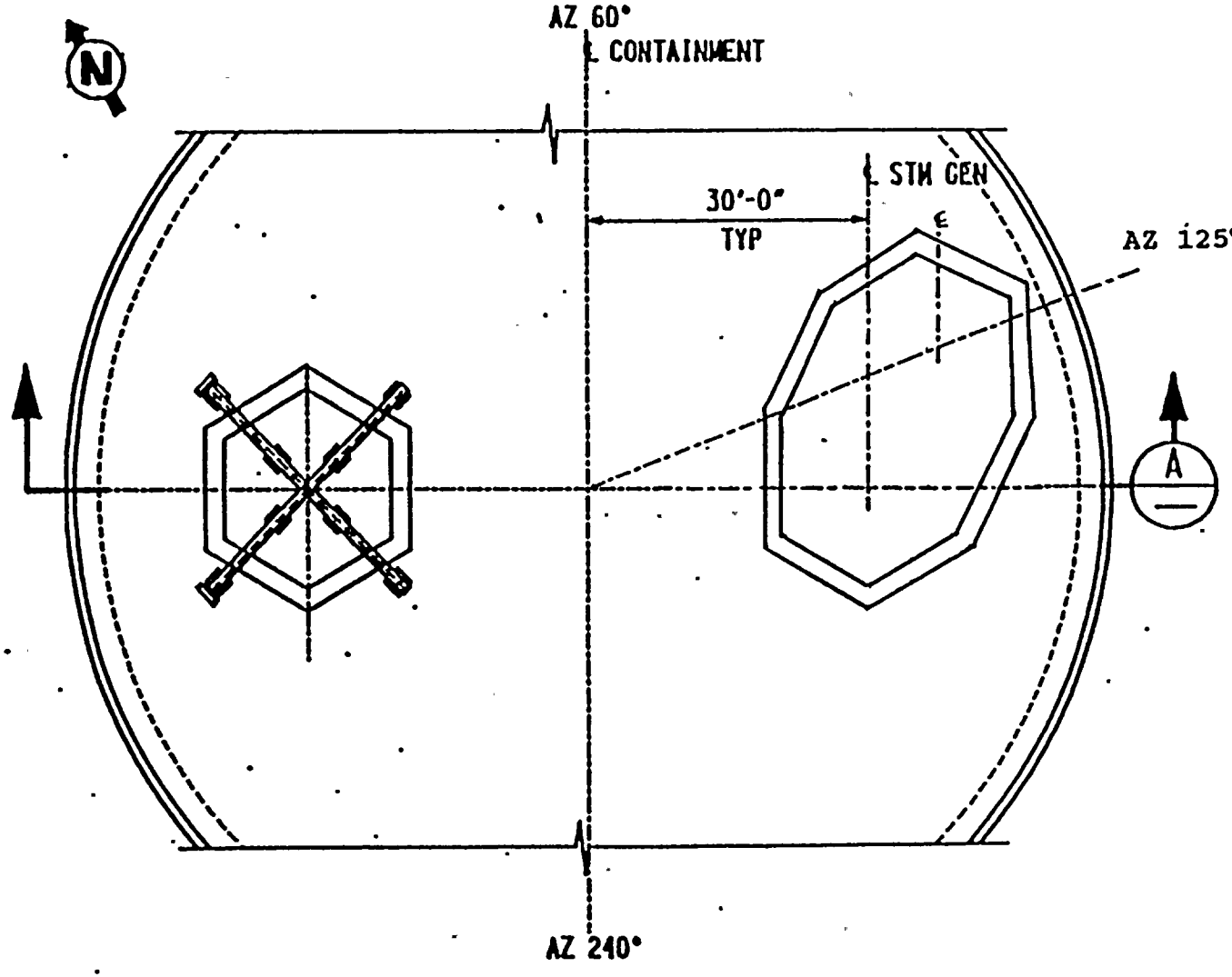
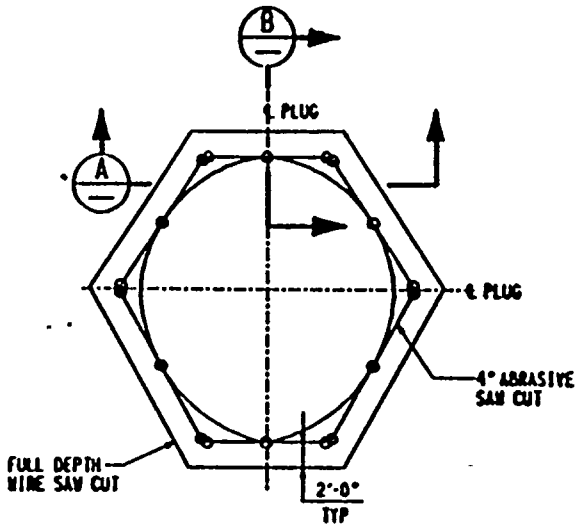
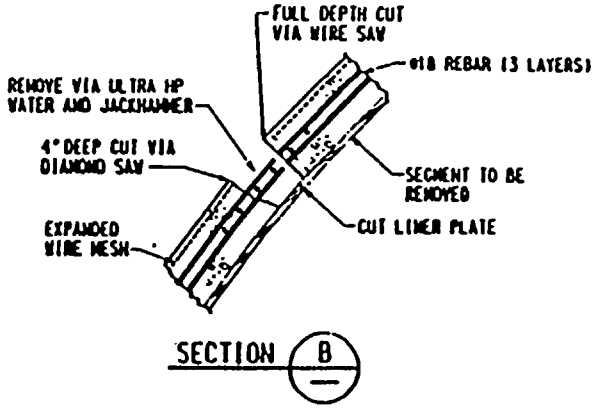
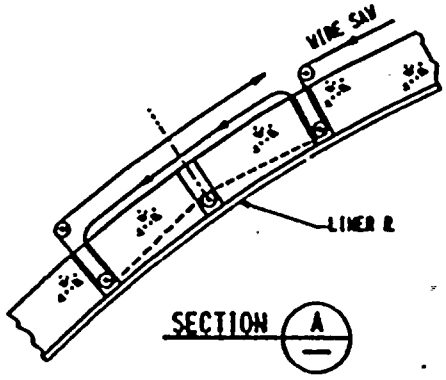


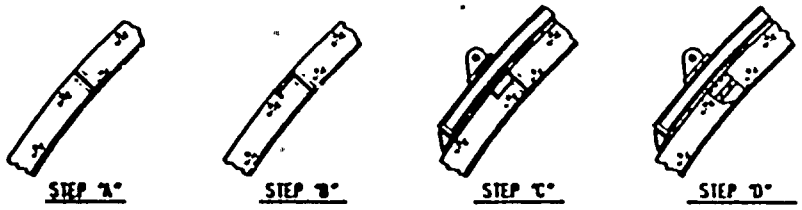
Figure 4.2.3
CONTAINMENT ROOF OPENING CONSTRUCTION SEQUENCE



CONCRETE PLUG PLAN







CONCRETE PLUG REMOVAL SEQUENCE

Figure 4.2.2
CONTAINMENT ROOF CONSTRUCTION OPENINGS
(Page 2 of 2)

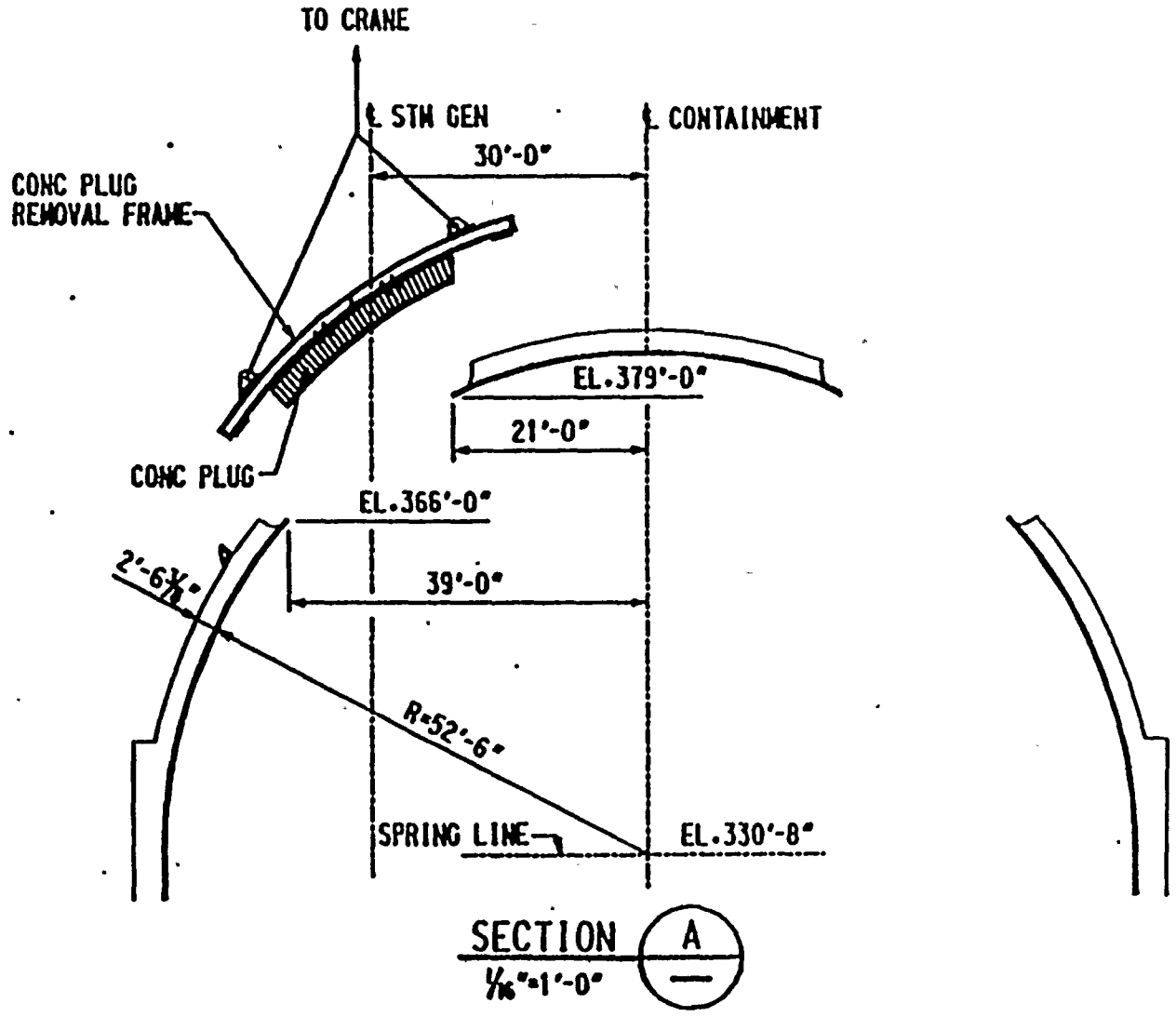


FIGURE 4.2-1
ONE PIECE STEAM GENERATOR RIGGING
(Page 1 of 2)

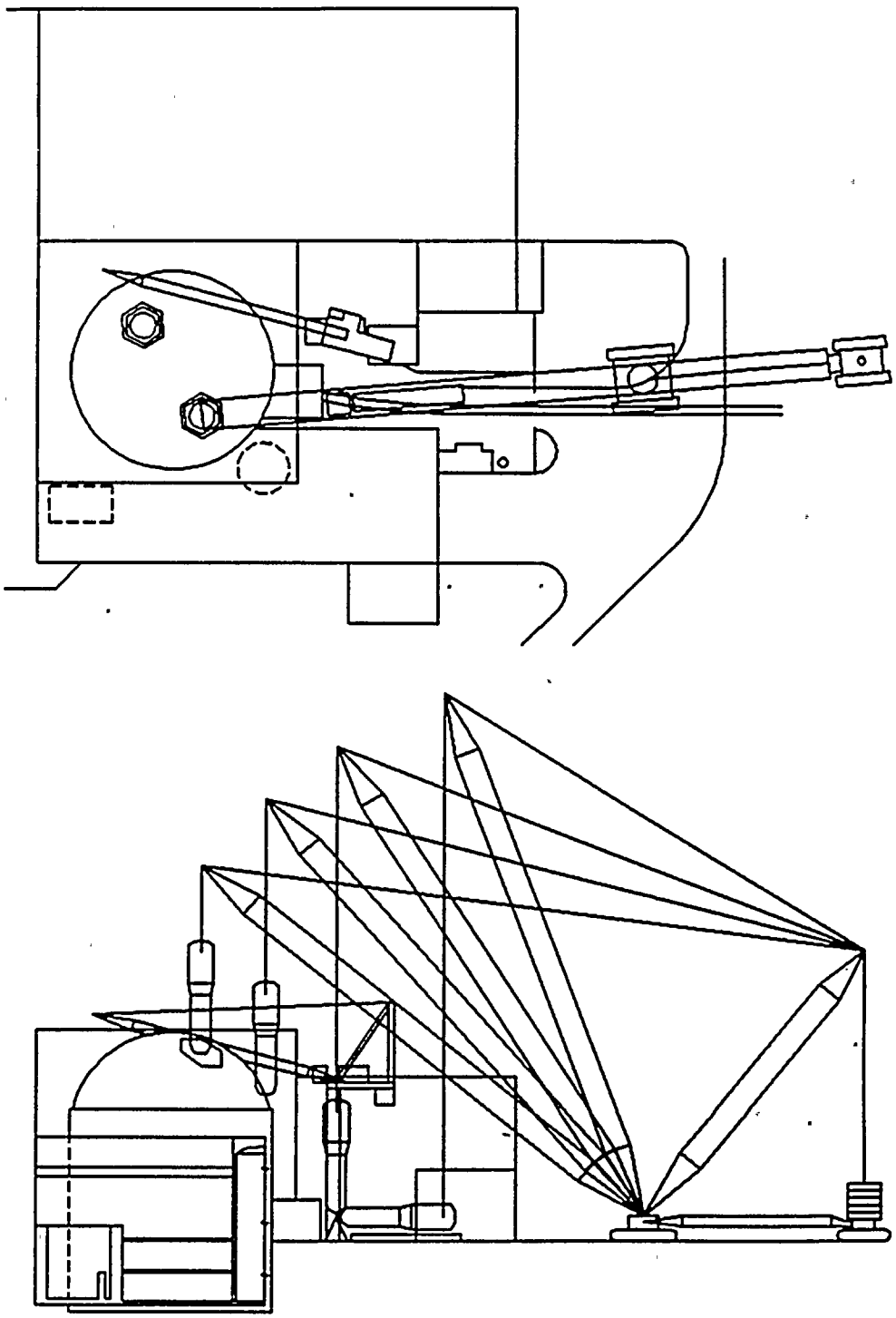


FIGURE 4.2-1
ONE PIECE STEAM GENERATOR RIGGING
(Page 2 of 2)

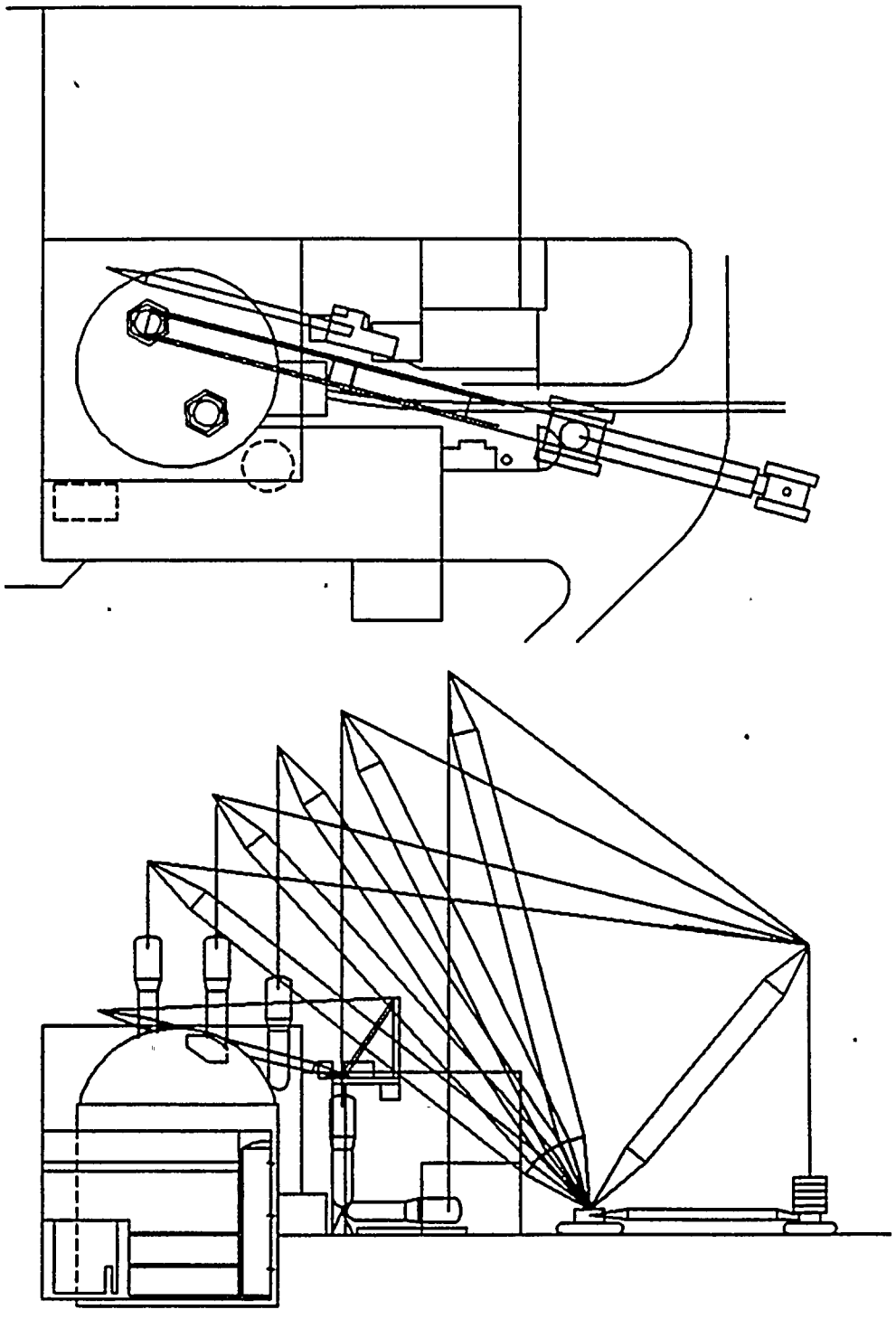
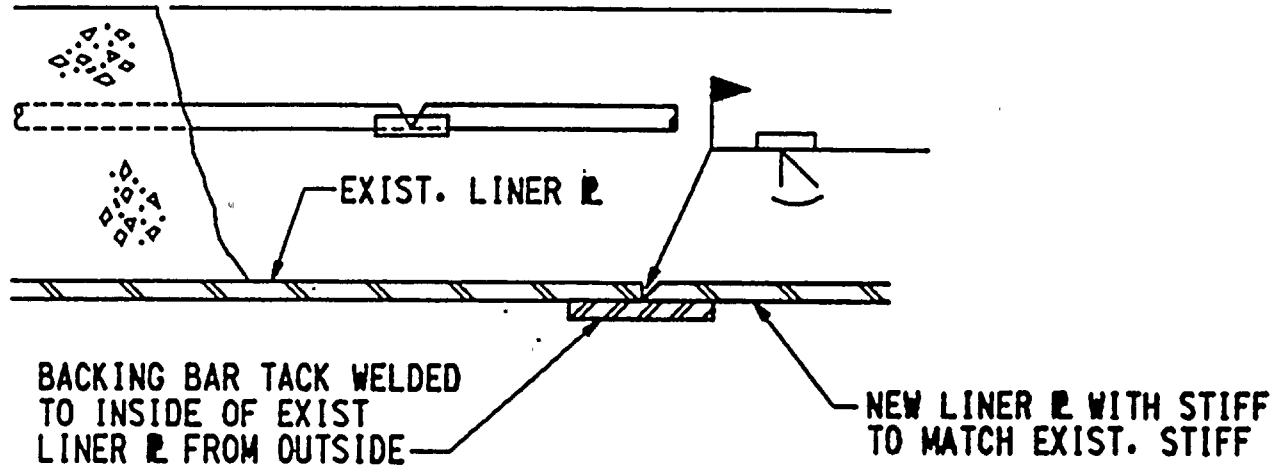


Figure 4.2.4
LINER PLATE REINSTALLATION WELD DETAIL



CURRENT PREFERENCE

- ONE PIECE REPLACEMENT FOR THE FOLLOWING REASONS
- MINIMIZIES IN CONTAINMENT HANDLING AND MOVEMENT
- SHORTER SCHEDULE (74 VS 84 DAYS)
- LESS EXPENSIVE (15 TO 20%)
- LESS RADIATION EXPOSURE (300R VS 400R)
- 100% SHOP ASSEMBLY

LICENSING APPROACHES

- LICENSE AMENDMENT

- 10CFR50.59

LICENSING APPROACHES CONT'D

LICENSE AMENDMENT

- PER 10CFR 50.90 AND 50 .91
- SUBMITTAL OF SAFETY ANALYSIS REPORT
- RESPONSES TO FORMAL NRC QUESTIONS
- NO SIGNIFICANT HAZARDS DETERMINATION
- TECHNICAL SPECIFICATION CHANGES
- FACILITY CHANGE PACKAGES AND ASSOCIATED SAFETY EVALUATIONS (INCLUDING CHANGES TO THE UFSAR)
- PRESENTATIONS TO THE NRC ON SELECTED SUBJECTS, PROCESSES, TECHNIQUES, PROJECT STATUS, ETC
- APPROACH USED FOR EARLY S/G REPLACEMENTS:
  - SURRY 1 AND 2
  - TURKEY POINT 3 AND 4
  - ROBINSON 2
  - POINT BEACH 1
  - D.C. COOK 2

LICENSING APPROACHES CONT'D

10CFR50.59

- COMPREHENSIVE SAFETY EVALUATION COVERING THE ENTIRE PROJECT

- SUPPORTING STUDIES, REPORTS,CALCULATIONS, ETC

- MINOR TECHNICAL SPECIFICATION CHANGES
  - SUBMITTED SEPERATELY, AS REQUIRED
  - FOR EXAMPLE, TRIP SETPOINT FOR S/G LEVEL MAY CHANGE

- PRESENTATIONS TO THE NRC ON SELECTED SUBJECTS, PROCESSES, TECHNIQUES, PROJECT STATUS, ETC.

- NRC INSPECTION/REVIEW OF SAFETY EVALUATION, RESPONSES TO NRC QUESTIONS

- APPROACH USED FOR ALL RECENT S/G REPLACEMENTS:
  - INDIAN POINT 3
  - PALISADES
  - MILLSTONE 2
  - NORTH ANNA 1 (PLANNED)
  - V.C.SUMMER (PLANNED)

MAJOR ISSUES TO BE ADDRESSED

- S/G TRANSPORT
- CONTAINMENT INTEGRITY
- S/G DROP POTENTIAL
- EFFECTS ON UFSAR/TECH SPECS
- ALARA
- ACCEPTANCE TESTING/EXAMINATIONS

SCHEDULE

• REPLACEMENT DECISION	9/92 - 1/93
• S/G FABRICATION	1/93 - 1/96
• RFP FOR DESIGN/INSTALLATION	1/93 - 6/93
• DETAIL DESIGN	7/93 - 1/95
• PRE OUTAGE MODIFICATIONS	3/95 - 2/96
• S/G INSTALLATION	3/96 - 6/96