

CERTIFIED

PDR
9/20/91

12/21/90 by C. Siess

ACRS SUBCOMMITTEE MEETING SUMMARY/MINUTES
FOR FTOL CONVERSIONS
DECEMBER 5, 1990
BETHESDA, MARYLAND

PURPOSE

The ACRS Subcommittee on FTOL Conversions held a meeting on December 5, 1990 in Bethesda, Maryland. The purpose of this meeting was to discuss the conversion of a provisional operating license (POL) to a full-term operating license (FTOL) for the Palisades Nuclear Plant. Copies of the meeting agenda and selected slides from the presentations are attached. The meeting began at 1:00 pm, and adjourned at 3:30 pm, and was held entirely in open session. The principal attendees were as follows:

ATTENDEES:

ACRS
C. Siess, Chairman
J. Carroll, Member
W. Kerr, Member
H. Lewis, Member
D. Houston, ACRS Staff

NRC/NRR
J. Zwolinski
B. Siegel
B. Holian
A. Masciantonio
B. Elliott

CONSUMERS POWER

D. Van de Walle

REVIEW DOCUMENTS

The following documents were reviewed at this meeting:

- (1) U.S. Nuclear Regulatory Commission, NUREG-1424, "Safety Evaluation Report Related to the Full-Term Operating License for Palisades Nuclear Plant," November 1990.
- (2) U.S. Nuclear Regulatory Commission, NUREG-0820, "Integrated Plant Safety Assessment - Systematic Evaluation Program - Palisades," October 1982.

DESIGNATED ORIGINAL

Handwritten initials: RSD/111

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DISCUSSION

In his opening discussion, C. Siess indicated that the Subcommittee would hear a general discussion about the FTOL process as it applied to both Palisades and Dresden, Unit 2 (Committee review on December 6, 1990), and then details of the safety evaluation as related to the FTOL conversion at Palisades. He also discussed the previous Committee letters that had been issued for the operating license and the review of the Systematic Evaluation Program (SEP). He made reference to other Committee letters regarding SEP reviews and FTOL conversions for Ginna and Millstone, Unit 1.

J. Zwolinski (AD/NRR) introduced the members of NRR who were supporting this effort and discussed the agenda for the presentations.

B. Siegel (PM/Dresden) briefly discussed the history of the POL to FTOL conversions. Originally, there were 15 POLs issued before 1970. All but 4 have been converted to FTOLs. The staff had stopped reviewing FTOLs in 1975 due to a backlog in USIs. In 1977, the plants with POLs were included in the SEP. The SEP review became an integral part of the safety review for the FTOL. The SERs for FTOL conversion address the following: TMI Open Issues, SEP Open Issues, Significant Open Issues and USIs.

A. Masciantonio (PM/Palisades) discussed the background, operating history, SEP results and USIs for Palisades. He indicated that the plant power level had been restricted from the beginning due to steam generator problems and that these problems continued over the years, eventually leading to a complete steam generator replacement. The spent fuel pool capacity had been increased by reracking but more capacity will be needed in the future and will be provided by dry storage. In regard to SEP issues, all but three of the original 90 have been resolved. Of the USIs, 6 of 12 which are applicable to Palisades are currently unimplemented. One of these is A-49, Pressurized Thermal Shock (PTS). He summarized his presentation by indicating that the plant is sound, the licensee technically qualified and the FTOL should be issued.

B. Elliot (NRR) discussed the analysis of the plant in regard to the proposed PTS Rule. He discussed the flux reduction program, the core loading scheme, and the material characteristics of the various vessel welds. He indicated that Palisades would reach the PTS screening criteria in the year 2001 while its operating license continues to 2007. To operate full term, the licensee is evaluating the following: (1) greater flux reduction, (2) reanalysis of probabilistic fracture mechanics and (3) vessel shielding with pad additions.

B. Holian (PM/Palisades) discussed two recent plant specific activities: (1) steam generator replacement and (2) transfer of

plant ownership. The SG replacement was carried out under a 50.59 review and required a large opening to be cut in the reinforced concrete containment shell. The replacement and repair of the containment is nearing completion. The new ownership of the plant (pending FERC approval) will be Consumers Power (44%), Bechtel (33%), and Westinghouse (23%). He further discussed the production run history, LER history and the last five SALP ratings.

D. Van de Walle (Consumers Power) discussed the organizational structure at Consumers and Palisades and indicated that their objective was to be one of the top ten nuclear plants in the country. To achieve this, they would have to be in the top quartile in 8 INPO rated areas. Currently, they are in the top quartile in 2 areas. He reviewed the operating history and the major modifications since the SEP. In closing he discussed the progress of the steam generator replacement project (2-3 weeks ahead of schedule) and the radiation exposure record during this effort (total, target and estimated). The total exposure is expected to be under 400 person-REM for this replacement effort.

During the discussion and in addition to those noted above, the Subcommittee Members expressed various comments and concerns as follows (random order):

- (1) H. Lewis questioned the wording in the proposed license which read as follows: The issuance of the license will not be inimical to the common defense and security or to the health and safety of the public. After some searching, the staff indicated that this wording was taken directly from 10 CFR 50.57(a)6 and as such, appeared in all licenses.
- (2) W. Kerr questioned the staff results presented for the review of SEP Topic III-6, "Seismic Design Issues", in which six issues were stated as open at the beginning of the review and were responded to by the licensee. Yet all six issues remain open after the staff review. The staff indicated that four issues had been closed since the SER was issued and only two remain open. Since the published SER was dated November 1990, this raised some question about the validity of the issuance date.
- (3) J. Carroll questioned this staff on how they made a finding that the licensee was technically qualified to operate the plant. Initially, the staff response was simply based on their ability to have operated for 20 years. Ultimately, the staff did indicate that the finding was based on compliance to regulations, SALP reviews, and multiple inspection results.
- (4) J. Carroll also questioned the meaning of a 50.59 review versus a safety analysis report (SAR) for the steam generator replacement. The staff indicated that utilities, to date,

have applied for eight steam generator replacements - the first 6 by the SAR route and the last two, including Palisades, by 50.59.

- (5) C. Siess asked about the inspection of the prestressing tendons that were removed to allow cutting the opening in the containment. The licensee indicated that these tendons were laid out and inspected. Some corrosion was observed on a couple of strands and there was some discoloration. All of the tendons were considered acceptable to use again. In response to a related question, the licensee indicated that another structural integrity test would be performed on the containment structure (as repaired) at 62 psig (design pressure of 55 psig).

FUTURE ACRS ACTION

C. Siess suggested an abbreviated agenda for the presentation by the staff and licensee to the Full Committee on December 6, 1990. He also noted that he had prepared a draft report on the FTOL conversion for Palisades and asked the Subcommittee Members to review it and provide comments to him.

NOTE: Additional meeting details can be obtained from a transcript of this meeting available in the NRC Public Document Room, 2120 L Street, NW, Washington, DC 20006, (202) 634-3273, or can be purchased from Ann Riley and Associates, Ltd., 1612 K Street, NW, Suite 300, Washington, DC 20006, (202) 293-3950.

ACRS SUBCOMMITTEE MEETING
FTOL CONVERSIONS
DECEMBER 5, 1990
BETHESDA, MARYLAND

- Tentative Agenda -

Palisades FTOL

	<u>Time</u>
A. Subcommittee Chairman Remarks -- C. Siess, ACRS	1:00 pm
B. Overview of FTOL Review Process -- B. Siegel (NRR)	1:15 pm
C. Discussion of NUREG-1424 (SER for Palisades FTOL) -- A. Masciantonio, NRR -- Consumers Power	1:30 pm
***** BREAK *****	
	3:15-3:30 pm
D. Continuation of Discussion	3:30 pm
E. Summary and Planning for Full Committee Discussion -- Subcommittee Members	4:30 pm
F. Adjourn	5:00 pm

NRR STAFF PRESENTATION TO THE ACRS

SUBJECT: DRESDEN 2 - POL TO FTOL CONVERSION

DATE: DECEMBER 5, 1990

PRESENTER: BYRON SIEGEL

PRESENTER'S TITLE/BRANCH/DIV: SENIOR PROJECT MANAGER/PDIII-2/
DIVISION OF REACTOR PROJECTS III/IV/V

PRESENTER'S NRC TEL. NO.: 492-3019

SUBCOMMITTEE:

POL TO FTOL CONVERSION HISTORY

- AEC ISSUED 15 PROVISIONAL OPERATING LICENSES (POLs)
 - RULE CHANGE IN 1970 WHICH DELETED FROM REGULATIONS ISSUANCE OF POLs
 - NO PROVISION IN RULE CHANGE FOR CONVERTING POLs
 - PURSUANT TO 10 CFR 2.109 POL NOT EXPIRED IF LICENSEE FILED APPLICATION AT LEAST 30 DAYS PRIOR TO EXPIRATION DATE
 - CECo FILED APPLICATION FOR CONVERSION OF DRESDEN 2 (D2) TO FULL TERM OPERATING LICENSE ON 11/15/72 (POL EXPIRED 12/22/72)
 - 1975 - STAFF STOPPED REVIEW OF CONVERSIONS DUE TO BACKLOG OF UNRESOLVED GSIs RELEVANT TO POL PLANTS
 - 1977 - COMMISSION ADOPTED STAFF RECOMMENDATION THAT POL FACILITIES BE INCLUDED IN PHASE II OF SEP.
 - FEB. 1983 - ISSUANCE OF SEP REPORT FOR D2 (IPSAR-NUREG-0823)
 - OCT. 1989 - ISSUANCE OF SUPPLEMENT 1 TO SEP REPORT FOR D2
 - JUNE 1990 - ISSUANCE OF ENVIRONMENTAL ASSESSMENT FOR D2
 - SEPT. 1990 - ISSUANCE OF SER TO SUPPORT CONVERSION FOR D2. (NUREG-1403)
- NOTE - DRESDEN 2 IS IDENTICAL TO DRESDEN 3 WHICH HAS A FTOL BECAUSE LICENSE WAS ISSUED AFTER RULE CHANGE.

SAFETY EVALUATION REPORT (SER)

ADDRESSES

- TMI OPEN ISSUES
- SEP OPEN ISSUES
- SIGNIFICANT OPEN ISSUES
- UNRESOLVED SAFETY ISSUES

DOES NOT ADDRESS

- FACILITY IMPROVEMENTS AND MODIFICATIONS
- LICENSE AND TS AMENDMENTS APPROVED BY STAFF
- ALL CLOSED ISSUES (IE, TMI, USIs, SEP TOPICS)

NRR STAFF PRESENTATION TO THE
ACRS

SUBJECT: CONVERSION OF PALISADES PROVISIONAL OPERATING LICENSE TO FULL TERM
OPERATING LICENSE

DATE: DECEMBER 5-7, 1990

PRESENTER: ARMANDO MASCIANTONIO

PRESENTER'S TITLE/BRANCH/DIV: PROJECT MANAGER/PD III-1/DIVISION OF REACTOR
AND SPECIAL PROJECTS

PRESENTER'S NRC TELEPHONE NO: 492-1337

CONVERSION OF PALISADES
PROVISIONAL OPERATING LICENSE
TO
FULL TERM OPERATING LICENSE

- o BACKGROUND
- o HIGHLIGHTS OF OPERATING HISTORY
- o SYSTEMATIC EVALUATION PROGRAM
- o UNRESOLVED SAFETY ISSUES

PALISADES POL/FTOL CONVERSION

BACKGROUND

- o CP ISSUED MARCH 14, 1967
- o POL ISSUED MARCH 24, 1971 TO EXPIRE MARCH 1, 1974
(ALLOW AN INTERIM PERIOD OF ROUTINE OPERATION)
- o FTOL CONVERSION APPLICATION JANUARY 22, 1974
(ALSO REQUESTED POWER INCREASE IN CONFORMANCE WITH 10CFR2.109)
- o STAFF REVIEW OF LICENSE CONVERSION STOPPED IN 1975
 - LARGE NUMBER OF UNRESOLVED GENERIC ISSUES
 - ESTABLISH APPROPRIATE SCOPE OF REVIEW
- o SUBSUMED INTO SYSTEMATIC EVALUATION PROGRAM IN 1977
 - STAFF RECOMMENDATION
 - SIMILAR SCOPE OF SEP AND POL CONVERSION
- o SEP RESULTS DOCUMENTED IN INTEGRATED PLANT SAFETY ASSESSMENT REPORT (NUREG-0820) AND SUPPLEMENT (NUREG-0820 SUPPLEMENT 1)

PALISADES POL/FTOL CONVERSION

ENVIRONMENTAL CONSIDERATIONS

- o FINAL ENVIRONMENTAL STATEMENT ISSUED JUNE 1972
- o FINAL ADDENDUM TO FES ISSUED FEBRUARY 1978 TO SUPPORT FULL TERM OPERATING LICENSE AT INCREASED POWER LEVEL
- o FINAL ADDENDUM CONCLUDED THAT FULL TERM OPERATING LICENSE COULD BE ISSUED
- o STAFF HAS REEXAMINED IMPACTS AND ISSUED ENVIRONMENTAL ASSESSMENT IN SUPPORT OF PALISADES FTOL
- o NO NEW IMPACTS OR SIGNIFICANT CHANGES FROM THOSE IDENTIFIED PREVIOUSLY - FES SUPPLEMENT NOT REQUIRED

PALISADES POL/FTOL CONVERSION

PLANT DESCRIPTION

- o PRW OF CE/BECHTEL DESIGN
- o 2530 MWt - 2 LOOPS - 2 STEAM GENERATORS
- o PRESTRESSED CONCRETE CONTAINMENT DESIGNED TO 55 PSIG AND 283 DEG F INTERNAL PRESSURE/TEMPERATURE
- o MECHANICAL DRAFT COOLING TOWERS
- o LOCATED ON EASTERN SHORE OF LAKE MICHIGAN NEAR SOUTH HAVEN, MI

PALISADES POL/FTOL CONVERSION

HIGHLIGHTS OF OPERATING HISTORY

- o MARCH 14, 1967 CP ISSUED
- o MARCH 24, 1971 POL ISSUED
- o JANUARY 22, 1974 FULL TERM LICENSE APPLICATION
REQUESTED POWER INCREASE TO 2638 MWt
(DENIED DUE TO SG PROBLEMS)
- o NOVEMBER 1, 1977 NRC GRANTS POWER INCREASE TO 2530 MWt BASED
ON REANALYSIS AND SG IMPROVEMENTS
- o JULY 24, 1987 CAPACITY OF SPENT FUEL POOL INCREASED FROM
798 TO 892 FUEL ASSEMBLIES
- o FALL 1990 STEAM GENERATOR REPLACEMENT PROJECT

PALISADES POL/FTOL CONVERSION

SYSTEMATIC EVALUATION PROGRAM

- o NRC INITIATED EFFORT IN 1977 WHICH PROVIDED
 - A) ASSESSMENT OF SIGNIFICANCE OF DIFFERENCES BETWEEN CURRENT POSITIONS AND THOSE HELD AT PLANT LICENSING
 - B) BASIS FOR RESOLVING DIFFERENCES IN AN INTEGRATED REVIEW
- o 137 TOPICS IDENTIFIED FOR REVIEW
 - 47 DELETED (USI, TMI, NOT APPLICABLE)
- o 90 TOPICS REVIEWED FOR PALISADES
 - 59 MET CURRENT CRITERIA
 - 31 PLANT DESIGN DIFFERENCES
- o RESULTS OF STAFF REVIEW PROVIDED IN
 - NUREG-0820 OCTOBER 1982
 - NUREG-0820 SUPPLEMENT 1 NOVEMBER 1983
- o ALL BUT THREE ISSUES CLOSED IN THESE DOCUMENTS

PALISADES POL/FTOL CONVERSION

SYSTEMATIC EVALUATION PROGRAM

- 1) TOPIC III-5A EFFECTS OF PIPE BREAKS INSIDE CONTAINMENT
 - o CLOSED BY SER ISSUED FEBRUARY 4, 1987

- 2) TOPIC III-6 SEISMIC DESIGN ISSUES - ADEQUACY OF DESIGN OF CERTAIN STRUCTURES TO WITHSTAND SEISMIC MOTION
 - o 4 OF 6 OPEN ISSUES ADDRESSED AND RESOLVED BY SER DATED AUGUST 31, 1990. REMAINING 2 ISSUES UNDER STAFF REVIEW.

- 3) TOPIC III-7B DESIGN CODES AND STANDARDS - EXTENT OF PALISADES CONFORMANCE TO REVISED DESIGN CODES AND STANDARDS
 - o ONE ISSUE REMAINING - EXTREME SNOW LOADING ON ROOF OF SPENT FUEL BUILDING

PALISADES POL/FTOL CONVERSION

UNRESOLVED SAFETY ISSUES

- o STATUS OF USIs WAS ADDRESSED IN THE STAFF REVIEW OF RESPONSES TO GENERIC LETTER 89-21
- o RESULTS WERE PRESENTED TO THE COMMISSION AT A MEETING ON FEBRUARY 14, 1990
- o 6 OF 12 USIs WHICH ARE APPLICABLE TO PALISADES ARE CURRENTLY UNIMPLEMENTED

PALISADES POL/FTOL CONVERSION

UNIMPLEMENTED USIs

USI #	TITLE	STATUS
A-9	ATWS 10CFR50.62	MODS TO BE COMPLETED DURING 1990 REFUELING OUTAGE
A-11	REACTOR VESSEL MATERIAL TOUGHNESS	ALTERNATIVE APPROACH UNDER STAFF REVIEW (USING ACCELERATED IRRADIATED SPECIMENS)
A-44	STATION BLACKOUT	SER PENDING
A-46	SEISMIC QUALIFICATION OF EQUIPMENT	IMPLEMENTATION UNDER SQUG GUIDELINES
A-47	SAFETY IMPLICATIONS OF CONTROL SYSTEMS	CE OWNERS GROUP RESPONSE UNDER REVIEW
A-49	PRESSURIZED THERMAL SHOCK	ANALYSIS OF EFFECT OF FLUX REDUCTION UNDER STAFF REVIEW

PALISADES POL/FTOL CONVERSION

CONCLUSIONS

STAFF REVIEW HAS DETERMINED THAT:

- o APPLICATION FOR FTOL FOR PALISADES WAS FILED BY CONSUMERS POWER COMPANY
- o PROVISIONS OF POL HAVE BEEN MET
- o FACILITY WILL OPERATE IN CONFORMANCE WITH FTOL APPLICATION
- o PUBLIC HEALTH AND SAFETY WILL NOT BE ENDANGERED
- o LICENSEE IS TECHNICALLY QUALIFIED
- o PALISADES HAS BEEN OPERATING SINCE 1971
- o FTOL FOR PALISADES SHOULD BE ISSUED

NRR STAFF PRESENTATION TO THE ACRS

SUBJECT: PALISADES NUCLEAR PLANT - PRESSURIZED THERMAL SHOCK

DATE: DECEMBER 5, 1990

PRESENTER: BARRY J. ELLIOT

PRESENTER'S TITLE/BRANCH/DIV: SR. MATERIALS ENGINEER
MATERIALS AND CHEMICAL ENGINEERING BRANCH
DIVISION OF ENGINEERING TECHNOLOGY, NRR

PRESENTER'S NRC TEL. NO.: 492-0709

SUBCOMMITTEE: MATERIALS AND METALLURGY SUB-COMMITTEE

PROPOSED PRESSURIZED THERMAL SHOCK RULE

10 CFR 50.61

- SCREENING CRITERIA
 - RT_{PTS} OF 270°F FOR PLATES AND AXIAL WELDS
 - RT_{PTS} OF 300°F FOR CIRCUMFERENTIAL WELDS

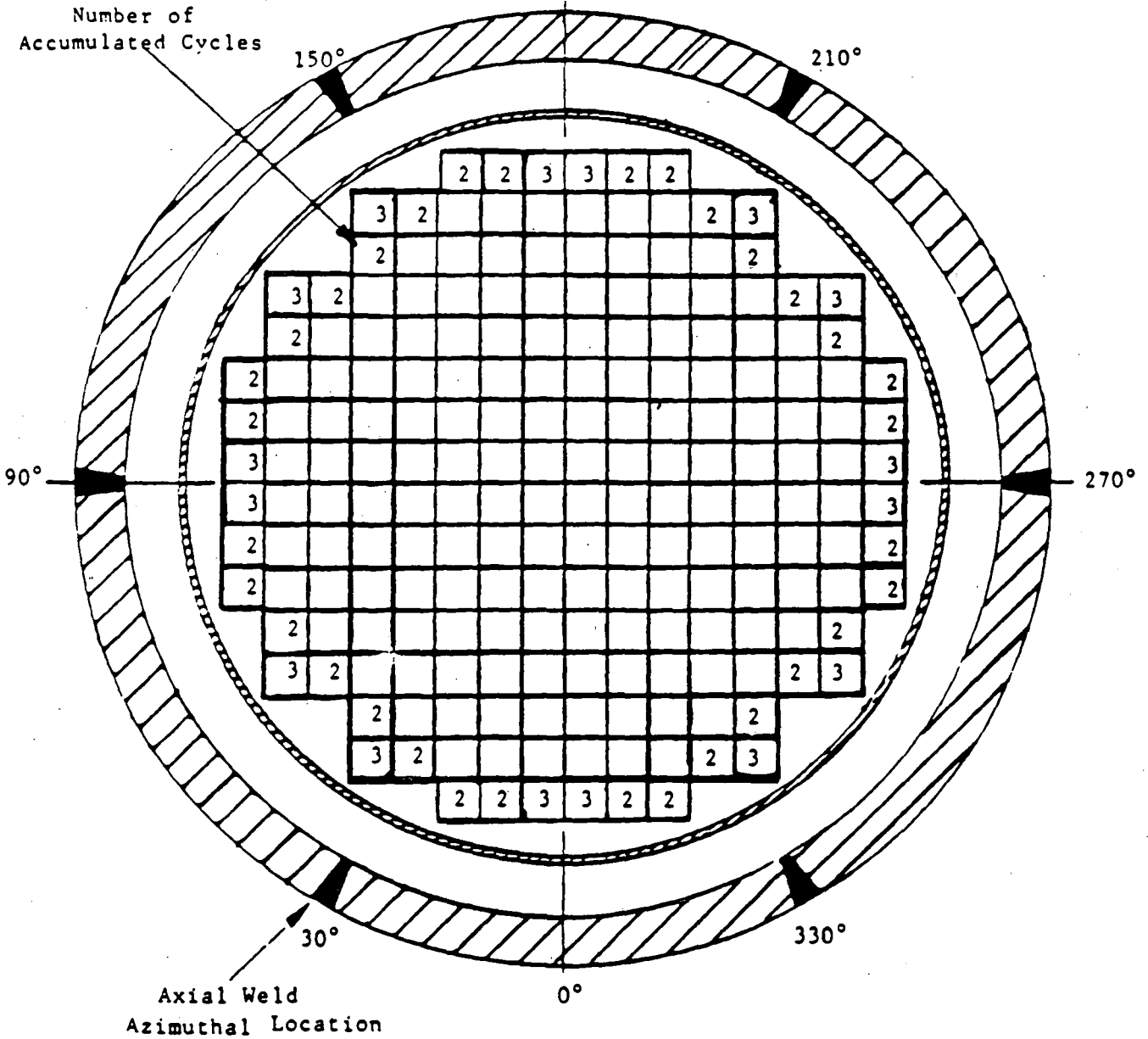
- RT_{PTS} FORMULA
 - $RT_{PTS} = I + M + (CF)(F)$
 - MARGIN (M), CHEMISTRY FACTOR (CF), AND FLUENCE FACTOR (F) IN PROPOSED PTS RULE REVISED TO VALUES RECOMMENDED IN RG 1.99, REV. 2.
 - UNIRRADIATED REF. TEMP. (I) UNAFFECTED BY PROPOSED PTS RULE

- OPERATING TEMPERATURE AND SURVEILLANCE TEST RESULTS COULD AFFECT RT_{PTS} VALUE

- NRC MAY APPROVE OPERATION AT VALUES OF RT_{PTS} ABOVE SCREENING CRITERIA

FIGURE 3.3

CYCLE 9 PERIPHERAL LOADING PATTERN



ASSEMBLIES REPRESENTED BY 3 ARE THRICE BURNED FUEL WITH HAFNIUM ABSORBERS

TABLE 2.2

FAST NEUTRON FLUX REDUCTION ACHIEVED WITH CYCLES 8 AND 9 CORE LOADING PATTERNS

<u>Material</u>	<u>Neutron Flux (10^{10}n/cm²-sec, E>1.0 MeV)</u>			<u>Flux Reduction*</u>	<u>Flux Reduction*</u>
	<u>Cycle 7</u>	<u>Cycle 8</u>	<u>Cycle 9</u>	<u>Cycle 8 (%)</u>	<u>Cycle 9 (%)</u>
Axial Weld					
0°	4.74	2.08	2.10	-56.1	-55.7
30°	4.67	2.31	2.02	-50.5	-56.7
Circumferential Weld	6.10	4.87	3.14	-20.2	-48.5
Base Metal	6.10	4.87	3.14	-20.2	-48.5

* Flux reduction is based upon the reference case of Cycle 7 which was typical of the previous cycles, ie. fresh fuel assemblies at the core periphery.

PALISADES REACTOR VESSEL BELTLINE

FROM REGULATORY GUIDE 1.99, REVISION 2

MATERIAL	SCREENING CRITERIA (°F)	Cu (%)	Ni (%)	CHEMISTRY FACTOR (CF)	FLUENCE TO REACH SCREENING CRITERIA (N/CM ²)	DATE WILL REACH SCREENING CRITERIA
AXIAL WELDS, 30°	270	.19	1.10	229	1.634E19	9/2001
0°	270	.19	1.10	229	1.634E19	2/2002
CIRCUMFERENTIAL WELD	300	.20	.97	218.7	3.495E19	6/2017
LOWER SHELL PLATE	270	.25	.54	167.6	6.046E19	2040

PALISADES REACTOR VESSEL BELTLINE AND SURVEILLANCE WELDS

<u>WELD METAL</u>	<u>WIRE TYPE/HEAT</u>	<u>FLUX TYPE</u>	<u>CU</u>	<u>NI</u>	<u>CHEMISTRY FACTOR</u>	<u>INIT. RT NDT</u>	<u>MARGIN</u>
AXIAL WELDS	RAC03 HEATS W5214 AND 34B009 + NI 200	LINDE 1092	.19	1.10	229	-56	66
CIRCUMFERENTIAL WELD	MILB4 Mod. HEAT 27204	LINDE 1092	.20	.97	218.7	-56	66
SURVEILLANCE WELD	RAC03 HEAT 3277 + NI 200	LINDE 1092	.26	1.28	276	-56	66

PALISADES SURVEILLANCE TEST RESULTS

CAPSULE	FLUENCE (N/CM ²)	MATERIAL	INCREASE IN REF. TEMP. MEASURED (°F)	INCREASE IN REF. TEMP. PREDICTED MEAN VALUE BY RG 1.99, REV.2 (F°)
W-290	1.105E19	PLATE (T)	155	171
		PLATE (L)	175	171
		WELD METAL	290	283
A-240	4.4E19	PLATE (T)	205	229
		PLATE (L)	205	229
		WELD METAL	350	380

CONCLUSIONS

- ° PALISADES SURVEILLANCE DATA INDICATES THAT RADIATION EMBRITTLEMENT PREDICTED BY RG 1.99, REV. 2 AND PROPOSED PTS RULE ACCURATELY PREDICTS RADIATION EMBRITTLEMENT TO PALISADES BELTLINE MATERIALS.
- ° WITH CURRENT FLUX REDUCTION, PALISADES WILL REACH PTS SCREENING CRITERIA IN 2001
- ° TO OPERATE UNTIL 2007 LICENSEE IS EVALUATING
 - GREATER FLUX REDUCTION
 - RG 1.154 PROB. FRACT. MECH. ANALYSIS
 - VESSEL SHIELDING - WELDING OF NEUTRON PADS ONTO CORE SUPPORT BARREL

Diablo Canyon Unit 1 Surveillance

MILB MOD HEAT 27204 WELD METAL

Capsule

Neutron
Fluence

Increase in Ref. Temp.
Measure (°F)

Increase in Ref. Temp.
Predicted Mean Value
By RG 1.99, REV. 2 (°F)

S

2.98E18

110

145

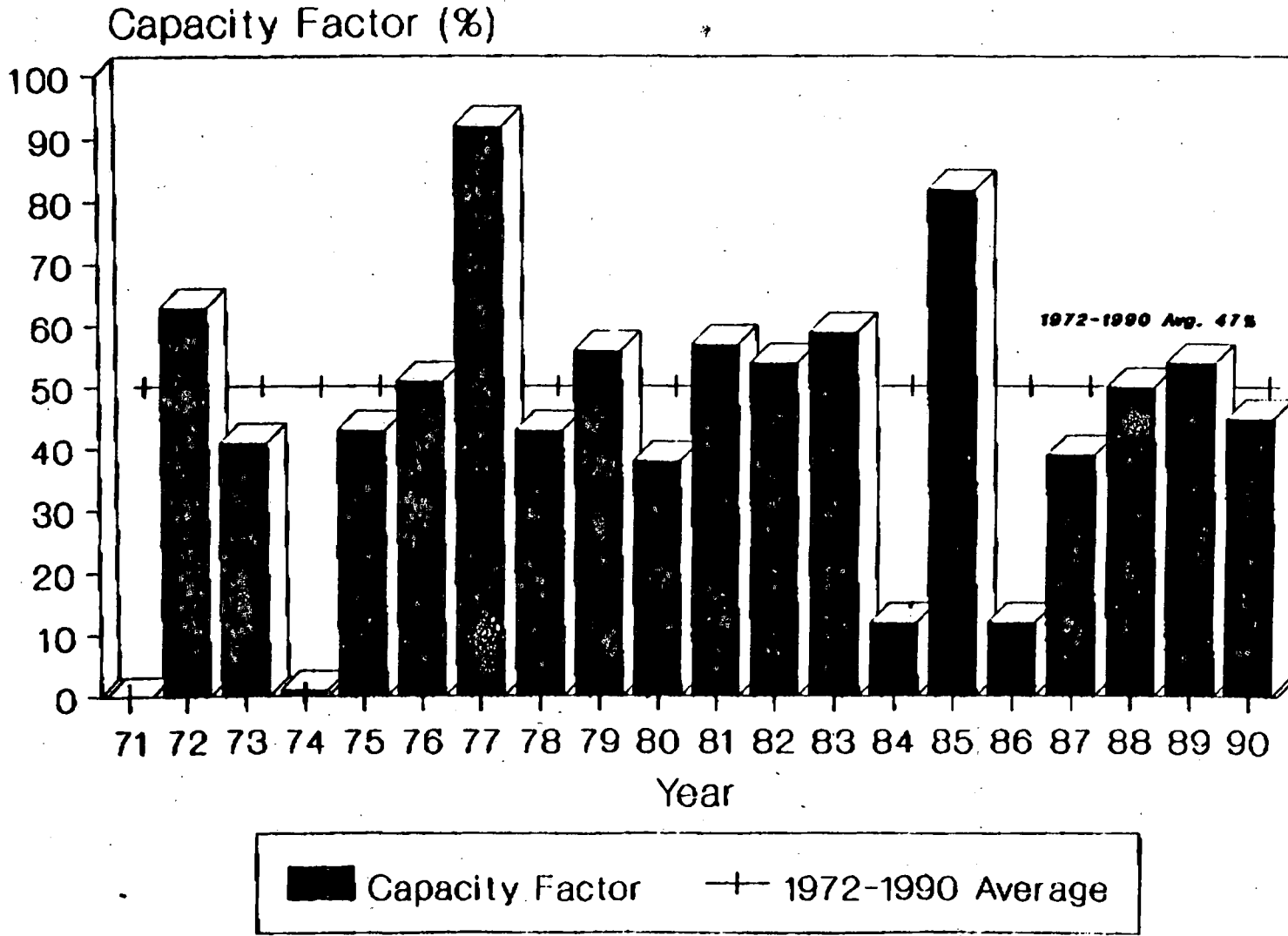
PALISADES POL/FTOL CONVERSION

PLANT SPECIFIC ACTIVITIES

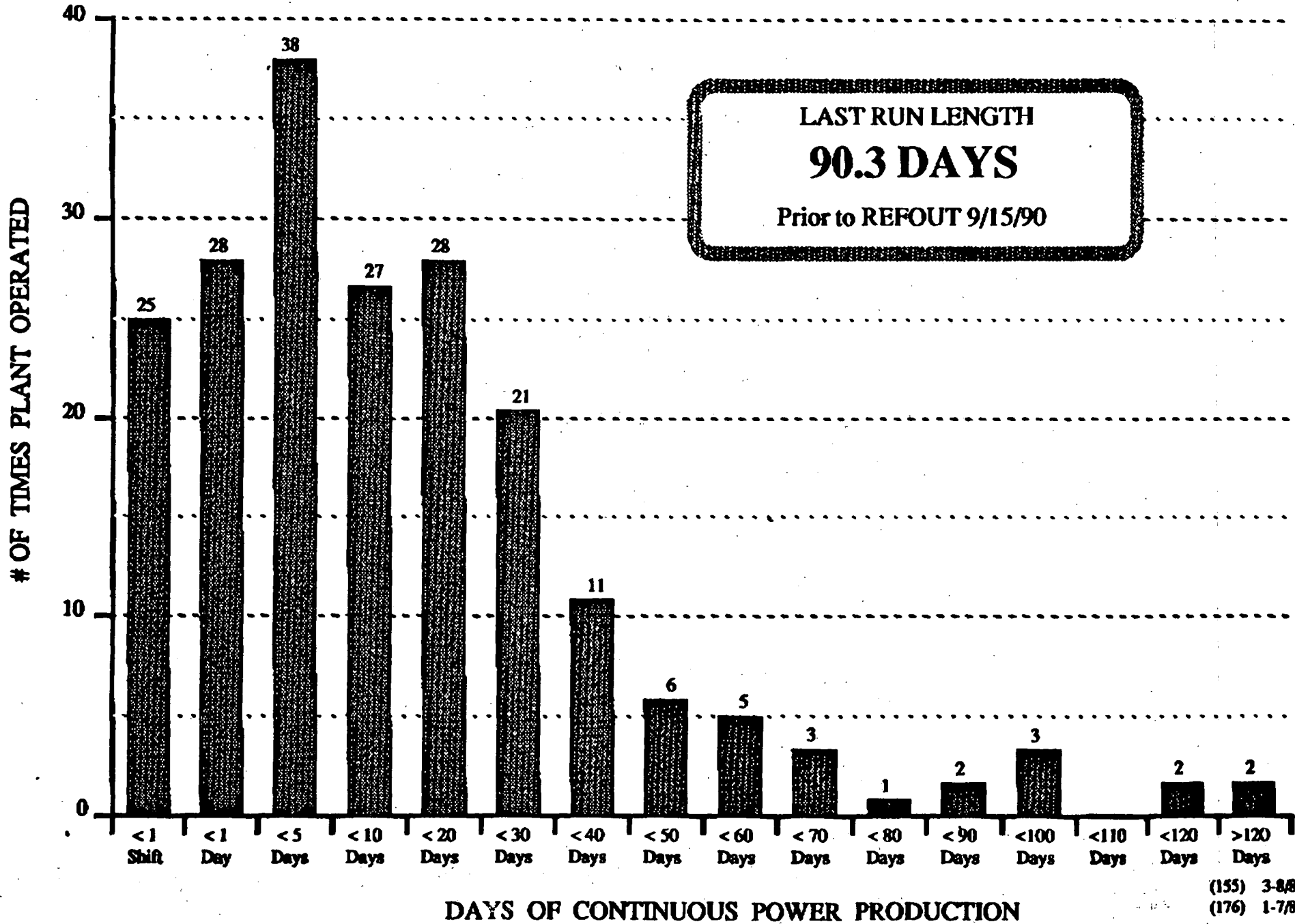
- o STEAM GENERATOR REPLACEMENT
 - UNDER 50.59 ANALYSIS
 - CONTAINMENT OPENING
 - NARROW GAP WELDING
 - PIPING MODIFICATIONS
 - TRANSIENT AND ACCIDENT ANALYSIS (MSLB, SG TUBE RUPTURE)
 - STEAM GENERATOR STORAGE

- o TRANSFER OF PLANT OWNERSHIP
 - FORMATION OF PALISADES GENERATING COMPANY
 - CONSUMERS POWER COMPANY (44%)
 - BECHTEL (33%)
 - WESTINGHOUSE (23%)

PALISADES CAPACITY FACTOR



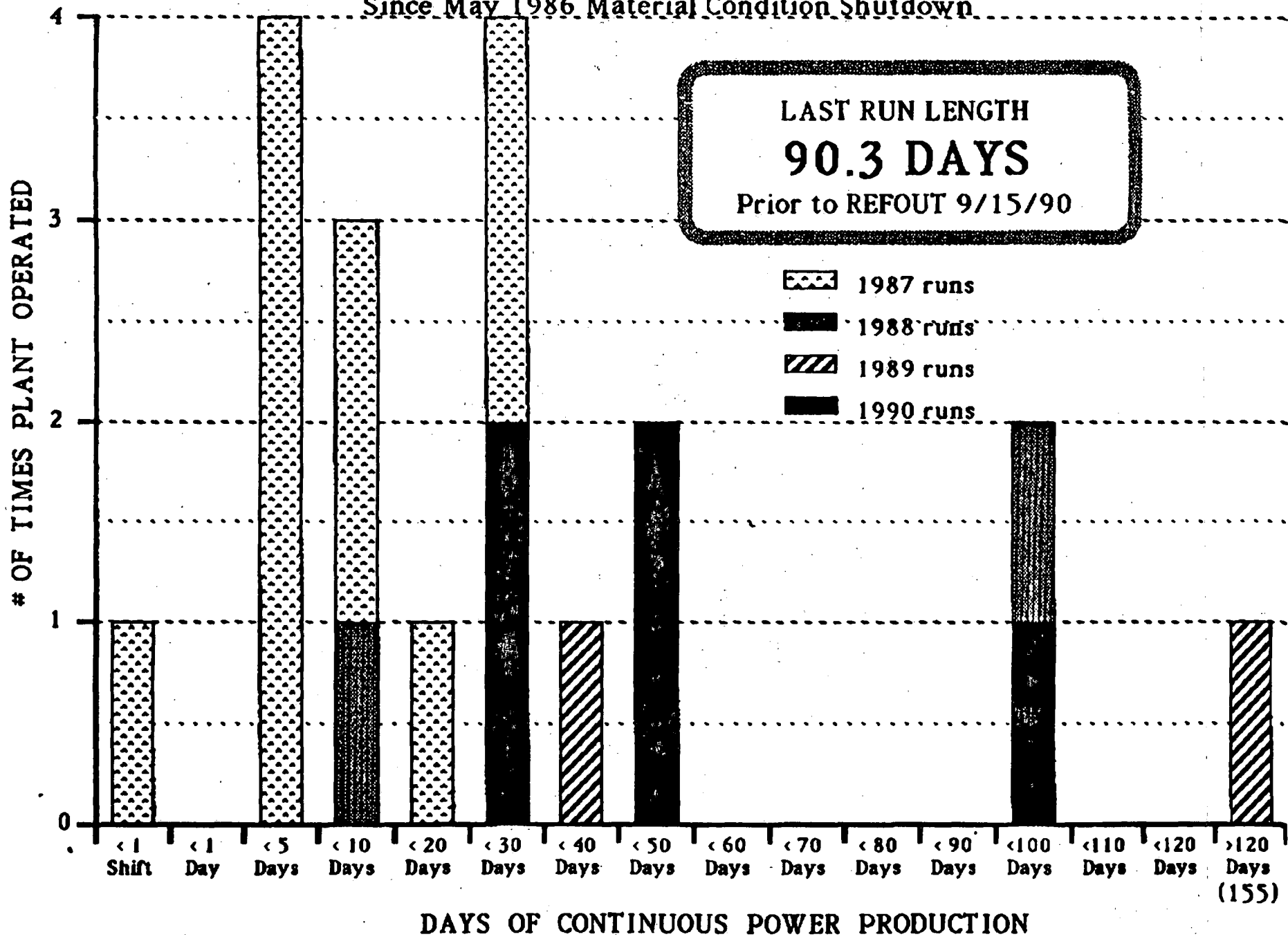
PALISADES PLANT PRODUCTION RUN HISTORY



(155) 3-8/89
(176) 1-7/81

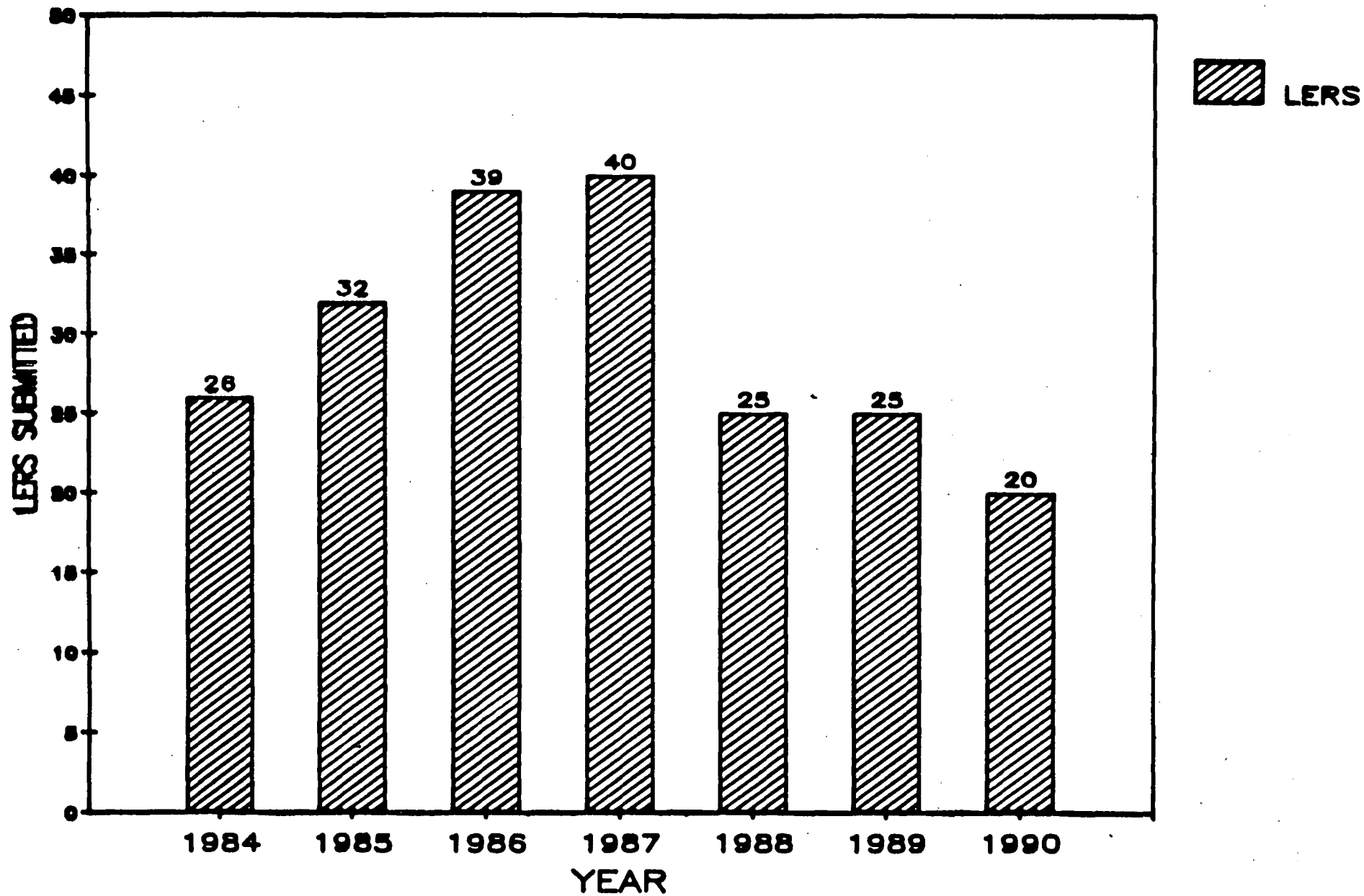
PALISADES PLANT PRODUCTION RUN HISTORY

Since May 1986 Material Condition Shutdown



PALISADES PLANT

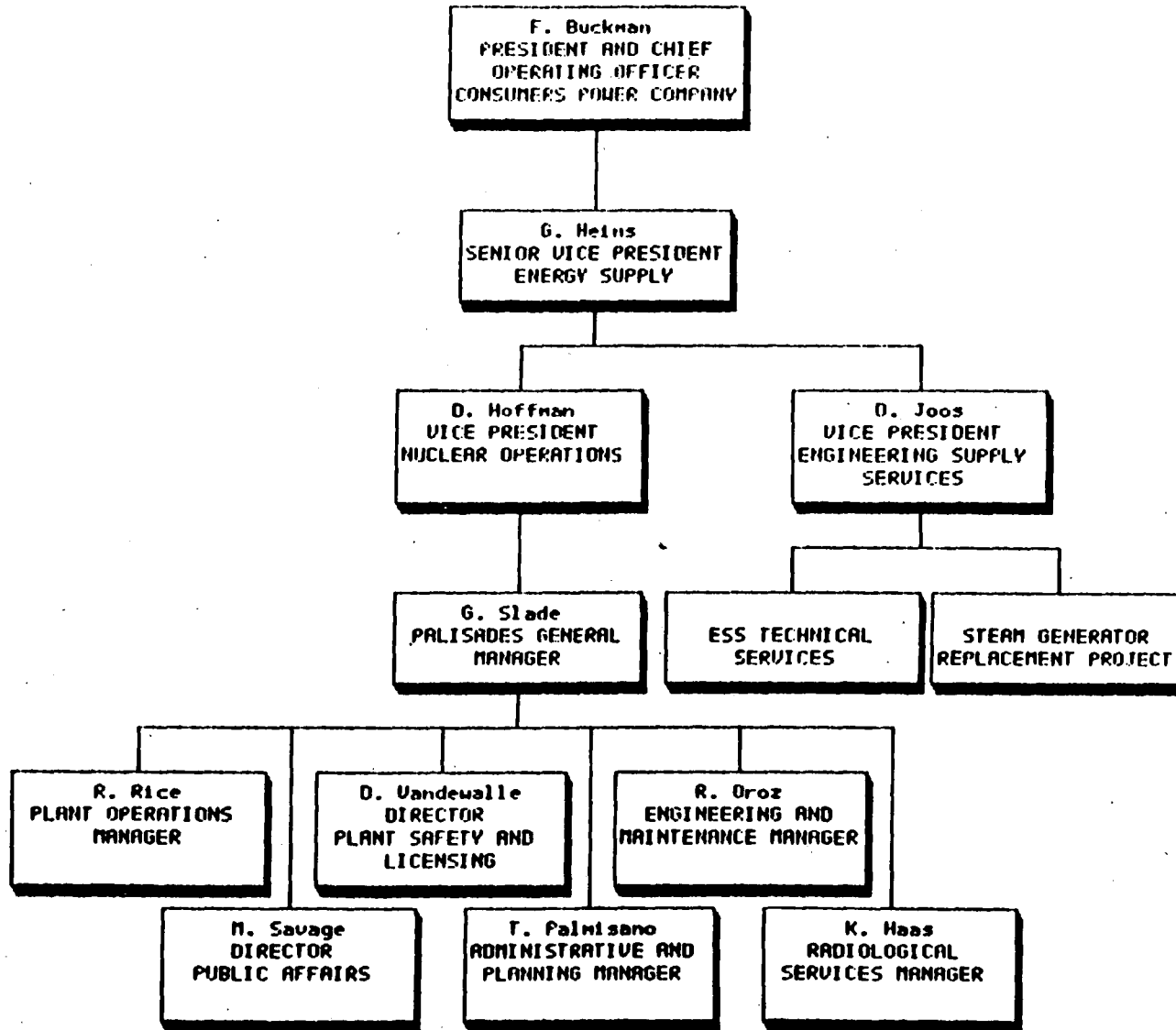
LICENSEE EVENT REPORT (LER) HISTORY



PALISADES SALP RATINGS

<u>SALP</u>	<u>PERIOD</u>	<u>OPERATIONS</u>	<u>RADIOLOGICAL CONTROLS</u>	<u>MAINTENANCE</u>	<u>EMERGENCY PREPAREDNESS</u>	<u>SECURITY</u>	<u>E/TS</u>	<u>SA/QV</u>
5	10/31/84	2	2	2	2	2	N	N
6	10/31/85	2	2	3	2	2	N	N
7	04/30/87	2	2	3	2	2	N	N
8	05/31/88	2 ↑	2	2	1	1	2	N
9	08/31/89	2 ↑	2	2 ↑	1	1	2	2

CONSUMERS POWER COMPANY
PALISADES



CONSUMERS POWER COMPANY

PALISADES PLANT

ACRS MEETING ON

FULL TERM OPERATING LICENSE

DAVID J VANDEWALLE

PALISADES SAFETY & LICENSING DIRECTOR

DECEMBER 5 AND 6, 1990

**ACRS MEETING ON PALISADES
FULL TERM OPERATING LICENSE**

- ◆ **CONSUMERS POWER COMPANY NUCLEAR ORGANIZATION**

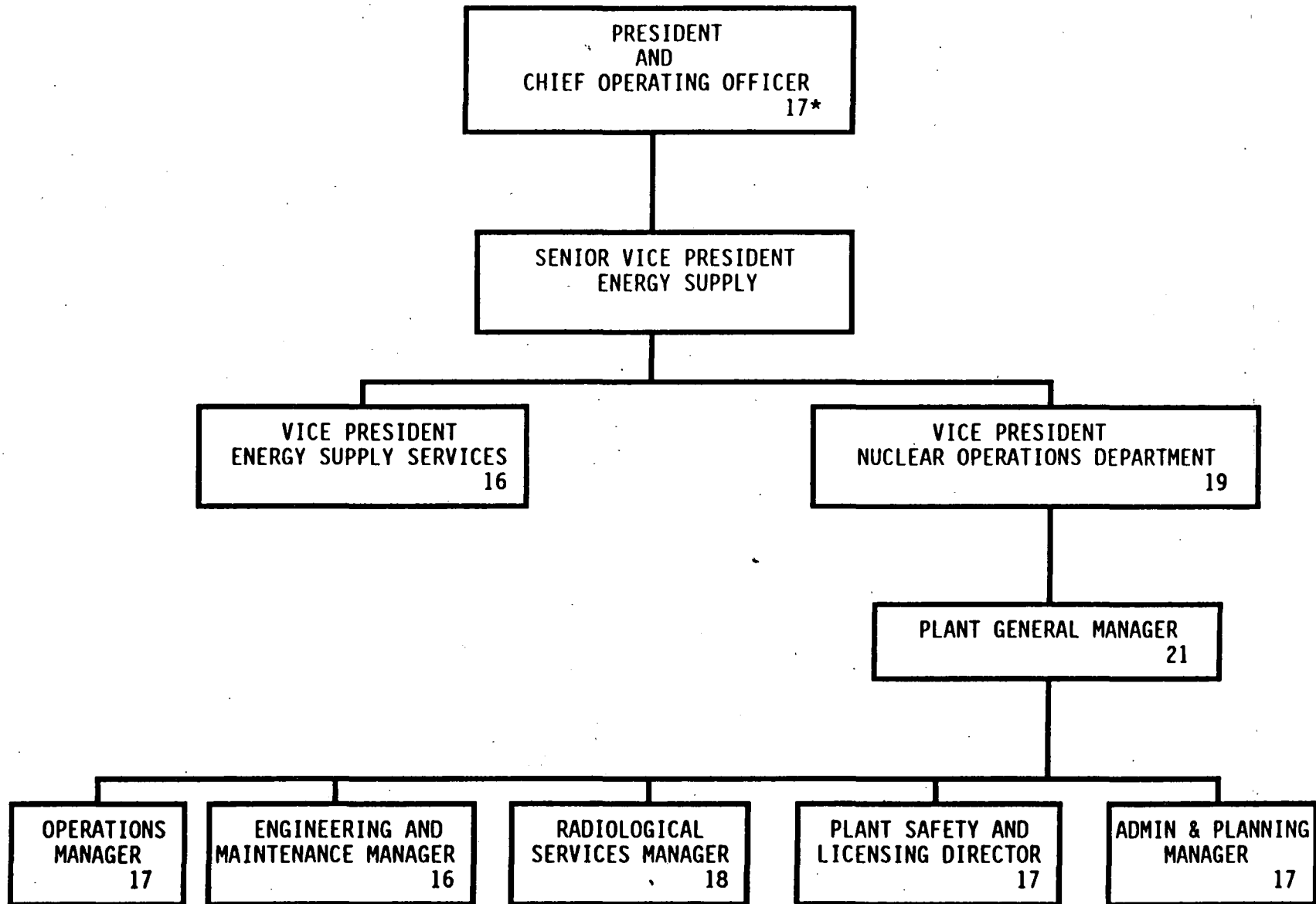
- ◆ **PLANT MISSION**

- ◆ **PLANT OPERATING HISTORY**

- ◆ **MAJOR MODIFICATIONS**

- ◆ **STEAM GENERATOR REPLACEMENT OUTAGE STATUS**

CONSUMERS POWER COMPANY.



*Years of Nuclear Experience

CONSUMERS POWER COMPANY

AT THE PALISADES PLANT OUR MISSION IS TO PROVIDE SAFE, RELIABLE AND COST-EFFECTIVE POWER SO THAT WE BECOME RECOGNIZED AS ONE OF THE TOP TEN NUCLEAR PLANTS IN THE UNITED STATES.

KEY PERFORMANCE AREAS:

- ◆ **SAFETY - NUCLEAR, INDUSTRIAL, RADIOLOGICAL, ENVIRONMENTAL**
- ◆ **RELIABILITY**
- ◆ **ECONOMIC**
- ◆ **REGULATORY**
- ◆ **PEOPLE**

OPERATING HISTORY

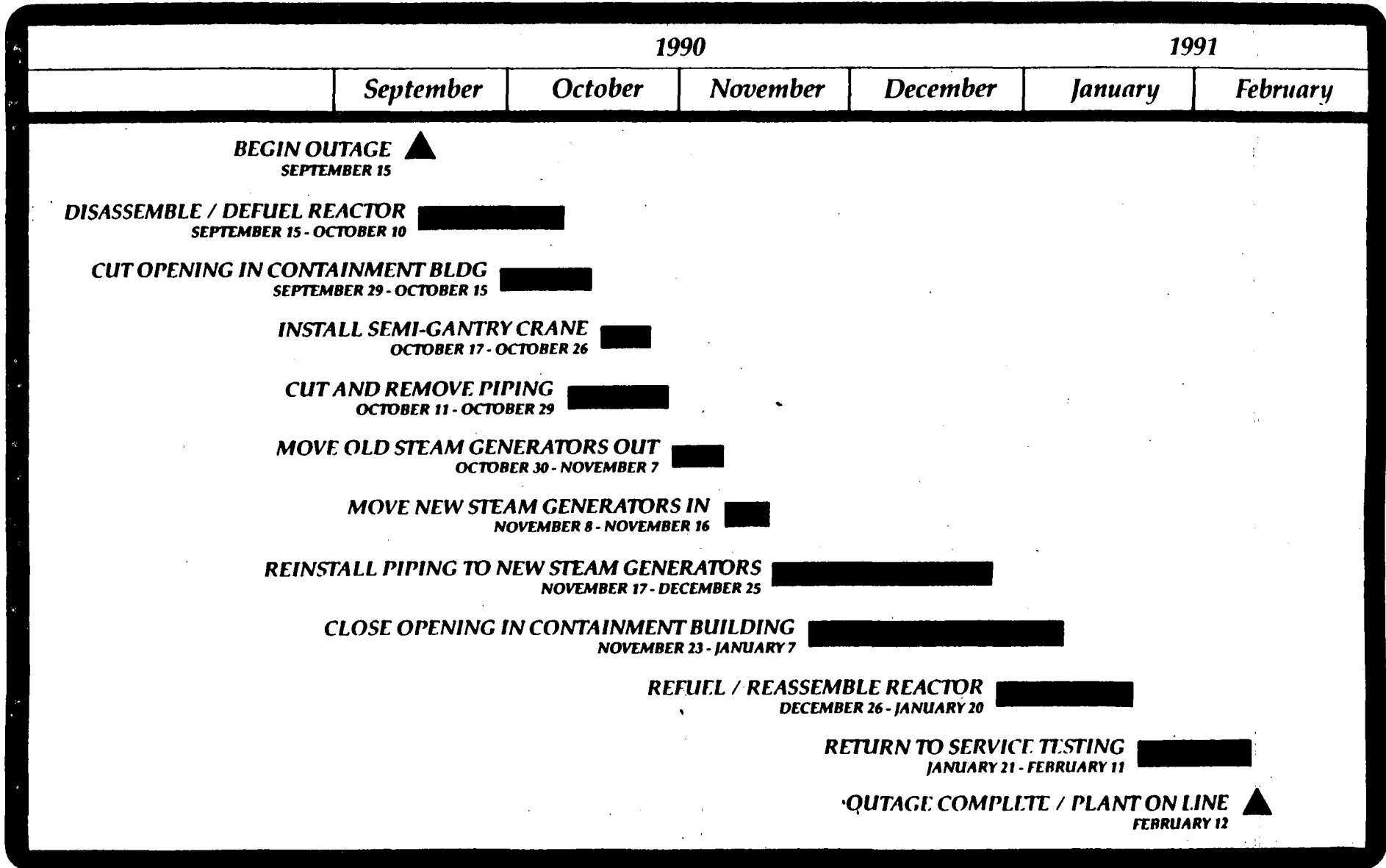
- 1971** **COMMERCIAL OPERATION**
- 1974** **ADDITION OF COOLING TOWERS**
- 1977** **POWER INCREASE TO 2530 MWT**
- 1978-1985** **SYSTEMATIC EVALUATION PROGRAM**
- PERIOD OF UNDISTINGUISHED**
 PERFORMANCE
- 1986** **MAY 19, 1986 REACTOR TRIP AND**
 CONFIRMATORY ACTION LETTER
- **MATERIAL CONDITION TASK**
 FORCE
 - **SYSTEM FUNCTIONAL EVALUATION**
 - **CONFIGURATION CONTROL**
 PROJECT
- 1987** **RETURN TO OPERATION**
- 1988-1989** **IMPROVING OPERATIONAL**
 PERFORMANCE
- DECISION TO REPLACE STEAM**
 GENERATORS
- 1990** **STEAM GENERATOR REPLACEMENT**

MAJOR MODIFICATIONS SINCE SEP

- ◆ **AUXILIARY FEEDWATER**
- ◆ **OFFSITE POWER**
- ◆ **PRESSURIZER PORVs AND BLOCK VALVES**
- ◆ **ATWS**
- ◆ **INSTRUMENTATION FOR SYSTEM PERFORMANCE TESTING**
- ◆ **SECONDARY SYSTEM IMPROVEMENTS**



Palisades Nuclear Plant Steam Generator Replacement Project



SGRP - FALL 1990

TOTAL, TARGET and ESTIMATED EXPOSURE

