

BOSTON EDISON COMPANY
PILGRIM NUCLEAR POWER STATION

Special Post-Startup Training Program
to satisfy the requirements of NUREG-1021,
Section ES-109, Parts B.2.e. and B.2.f
for RO licensed personnel and
Parts D.2.e and D.2.f for SRO licensed personnel

6-8 wks/group

SPECIAL POST-STARTUP TRAINING PROGRAM

Reviewed and Approved:	<u>H. R. [Signature] for H. R. Belfour</u> Operator Training Section Manager	<u>7-19-88</u> Date
Reviewed and Approved:	<u>[Signature]</u> Chief Operating Engineer	<u>7/20/88</u> Date
Reviewed and Approved:	<u>[Signature]</u> Plant Operations Section Manager	<u>7/20/88</u> Date
Approved for Implementation:	<u>[Signature]</u> Nuclear Training Manager	<u>8/9/88</u> Date

PROGRAM DESCRIPTION

We currently have sixteen NRC licensed Operators at Pilgrim Station, whose NRC licenses are limited such that the license can only be used while the Reactor Mode Switch is in the "Refuel" or "Shutdown" positions. These sixteen operators are:

<u>Name</u>	<u>NRC License Number</u>
GROUP ONE	
David Cafarella	OP-10517
William R. Hendy	OP-10518
Eric E. Hinxman	OP-10519
Richard J. Lawless	OP-10520
Brian Lewis	OP-10521
Terence J. McDonough	OP-10522
Richard H. Sherman	OP-10523
Robert C. Stiles	OP-10524
Bruce VanVleet	SOP-10736
GROUP TWO	
R. Haislet	OP-10660
T. Phipps	OP-10661
D. Price	OP-10662
M. Rusley	OP-10663
K. Walz	OP-10664
W. Green	SOP-10737
R. German	OP-10659

*2 weeks
manip.
meaningful
experience*

This limitation is imposed on these sixteen licensed operators, due to the fact that Pilgrim Station was in an extended Shutdown/Refueling Outage while they were enrolled in NRC license training, and as a result, these men did not have the opportunity to satisfy two distinct NRC license training requirements. Both requirements are in NUREG-1021, Section ES-109, and they are:

1. Training requirement #B.2.e. (perform five significant, diverse reactivity manipulations on the plant for which the license is sought.)
 - a. RO requirement = B.2.e; SRO requirement = D.2.e.
2. Training requirement #B.2.f. (stand a minimum of 20 control room operator training watches with the plant operation at $\geq 20\%$ power.)
 - a. RO requirement = B.2.f; SRO requirement = D.2.f.

Once the above two listed training requirements have been satisfied by these operators with the limited licenses, and substantiating documentation is provided to Region 1, the NRC will issue an amended license which allows manipulation of the reactor controls at Pilgrim Station during all modes of reactor operation. (Reference: letter from Mr. Samuel J. Collins of the NRC, dated January 8, 1987, to Mr. James M. Lydon of Boston Edison.)

At the NRC Licensing Examination Exit Meeting, conducted on May 29, 1987, the NRC Examination Team raised the issue of how this additional required control room training would be implemented. At this exit meeting we committed that the additional required control room time for personnel issued this type of limited license, would be a structured training program, which would be closely supervised. (This BECo. commitment to the NRC, has been captured in NRC Letter #1.87.204, dated July 14, 1987, which contained NRC Examination Report #50-293/87-25 (OL).)

Consequently, our goal is to implement a structured training program for these licensed operators, to commence as soon as possible after the Reactor Mode Switch is placed to either "Startup" or "Run", and to continue with this training program until all sixteen operators have fully satisfied training requirements #B.2.e. (D.2.e) and B.2.f (D.2.f) of Section ES-109 of NUREG-1021.

The structured training program is to be implemented as outlined below:

- A. Once the Reactor Mode Switch is placed in either the "Startup" or "Run" position these 16 NRC licensed personnel are to be designated as unavailable to perform the duties of an NRC licensed operator at Pilgrim Station.
- B. All 16 of these personnel are to remain on shift with their normally assigned crew:
 1. "Group One" personnel are to be assigned to on-shift observation training first, and are not to be assigned any other concurrent duties until they have completed five significant reactivity manipulations and twenty observation watches at 20% power or greater.

- a. "Group One" personnel may not be assigned to perform the duties of an NRC licensed operator, until the NRC has reviewed each individuals on-shift observation training documentation, and has subsequently issued these individuals a license which is effective for all modes of reactor plant operation.
2. "Group Two" personnel will initially remain on-shift, and may be assigned to perform shift functions/duties, other than those functions/duties which require an NRC license.
- a. Each "Group Two" individual will remain eligible for assignment of non-licensed duties, until a "Group One" individual on his shift completes the requirements of this "special post-startup training program."
- 1) "Group Two" individuals on a given shift, will replace "Group One" personnel in this "special post-startup training program", on a one-for-one basis.
- 2) "Group Two" personnel may perform reactivity manipulations under-instruction, and have these manipulations documented and count toward their five required manipulations, even if they have not yet been officially assigned to the "special post-startup training program".
- C. "Special Post-Startup Training Program" on-shift supervision, will be provided seven days per week, twenty-four hours per day.

1. The individuals assigned to provide on-shift program supervision shall possess either an SRO certification or an NRC issued SRO license, and shall be assigned no other concurrent duties/responsibilities.
2. The on-shift training supervisors shall perform the following functions:

- a. Ensure that the trainees do not operate any control room controls, unless they are under the direct supervision of an on-shift licensed operator, assigned to the Main Control Room.
- b. Ensure that the on-shift training time is utilized effectively, by coordinating trainee involvement with logtaking, routine evolutions/tasks and surveillances, and non-routine tasks and surveillances. (Ex: Review the MSTP requirements at the beginning of each shift.)
- c. Ensure that the trainees are well-prepared prior to becoming involved with any on-shift task or evolution.
- d. Regularly re-enforce the need for procedural review and compliance, especially Procedures 1.3.4 and 1.3.34.
- e. Ensure that the trainees receive a thorough shift turnover prior to assuming the watch under-instruction.
- f. Ensure that all training watches are logged in the Control Room Supervisors logbook.

WEEKEND
one of 3 SROs

3 Physics (3)
Personnel
M-F 24hrs

W.E. —
will be
OTJ
training
instructor

g. Maintain thorough, neat and accurate training records/documentation.

1) Provide an overview/summary of the trainee activities of each observation training watch in the "Special Post-Startup Training Activities Logbook".

2) Document all Training Watches for each trainee in Section "A" of the attached "Observation Training Check-Off List". (Attachment "A")

3) Document all Reactivity Manipulations performed by each trainee in Section "B" of the attached "Observation Training Check-Off List". (Attachment "A").

D. Documentation of completion of this "Special Post-Startup Training Program".

1. As each trainee completes all of the on-shift observation training requirements, all of his associated training documentation, will be assembled and include:

a. Copies of all pages of the "Control Room Supervisor's Logbook" on which he is logged in as a trainee.

b. Copies of all pages of the "Special Post-Startup Training Activities Logbook" on which he is logged in as a trainee.

c. Original of his "Observation Training Check-Off List" including both Section "A" and Section "B".

2. Once the on-shift training supervisor has completed a thorough documentation review, and has resolved all identified documentation deficiencies, he is to forward the documentation package to the Operator Training Section Manager.

a. The on-shift training supervisor is responsible for coordinating the reassignment of the concerned individual from the "in-training status", to the "available for non-licensed shift duties status".

3. The Operator Training Section Manager will coordinate the: 1. assembly of the documentation into a neatly bound and indexed package, 2. final package review, 3. development of a cover letter to NRC Region 1, 4. forwarding the data package to the NRC, and 5. the resolution of any questions or concerns the NRC staff may have on this training.

a. We anticipate that this will take a minimum of two weeks for the NRC staff to complete their required reviews and to re-issue an NRC license which is valid for all modes of reactor plant operation.

NOTE: We anticipate that it will take from 12 to eighteen weeks for all 16 operators to complete this special post-startup training program, so that their NRC licenses may be amended for all modes of reactor plant operation.

Recirc- 10% change

will add Guidance to call card

ATTACHMENT "A"

Observation Training
Check-Off List

OBSERVATION TRAINING

CHECK - OFF LIST

NAME: _____

DATE STARTED: _____

DATE COMPLETED: _____

NAME: _____

OBSERVATION TRAINING CHECK-OFF LIST

SECTION A
(Record of observation training time received)

DATE:	SHIFT:	AVG. SHIFT PWR. LEVEL:	ON-SHIFT TRAINING SUPERVISOR SIGNATURE:
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

NAME: _____

SECTION A - CONTINUED

DATE:	SHIFT:	AVG. SHIFT PWR. LEVEL:	ON-SHIFT TRAINING SUPERVISOR SIGNATURE:
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			
41.			
42.			
43.			

NAME: _____

SECTION A - CONTINUED

DATE:	SHIFT:	AVG. SHIFT PWR. LEVEL:	ON-SHIFT TRAINING SUPERVISOR SIGNATURE:
44.			
45.			
46.			
47.			
48.			
49.			
50.			
51.			
52.			
53.			
54.			
55.			
56.			
57.			
58.			
59.			
60.			
61.			
62.			
63.			
64.			
65.			

NAME: _____

SECTION B

(Record of reactivity manipulations actually performed; a minimum of five significant reactivity manipulations is required and every effort should be made to diversify these reactivity changes. Reference NUREG-1021 and NUREG-0094)

1. Reactivity Manipulation #1:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

d. On-Shift Training Supervisor Signature: _____

2. Reactivity Manipulation #2:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

d. On-Shift Training Supervisor Signature: _____

3. Reactivity Manipulation #3:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

d. On-Shift Training Supervisor Signature: _____

NAME: _____

SECTION B - CONTINUED

4. Reactivity Manipulation #4:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

d. On-Shift Training Supervisor Signature: _____

5. Reactivity Manipulation #5:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

d. On-Shift Training Supervisor Signature: _____

6. Reactivity Manipulation #6:

a. date: _____

b. shift: _____

c. brief description of manipulation: _____

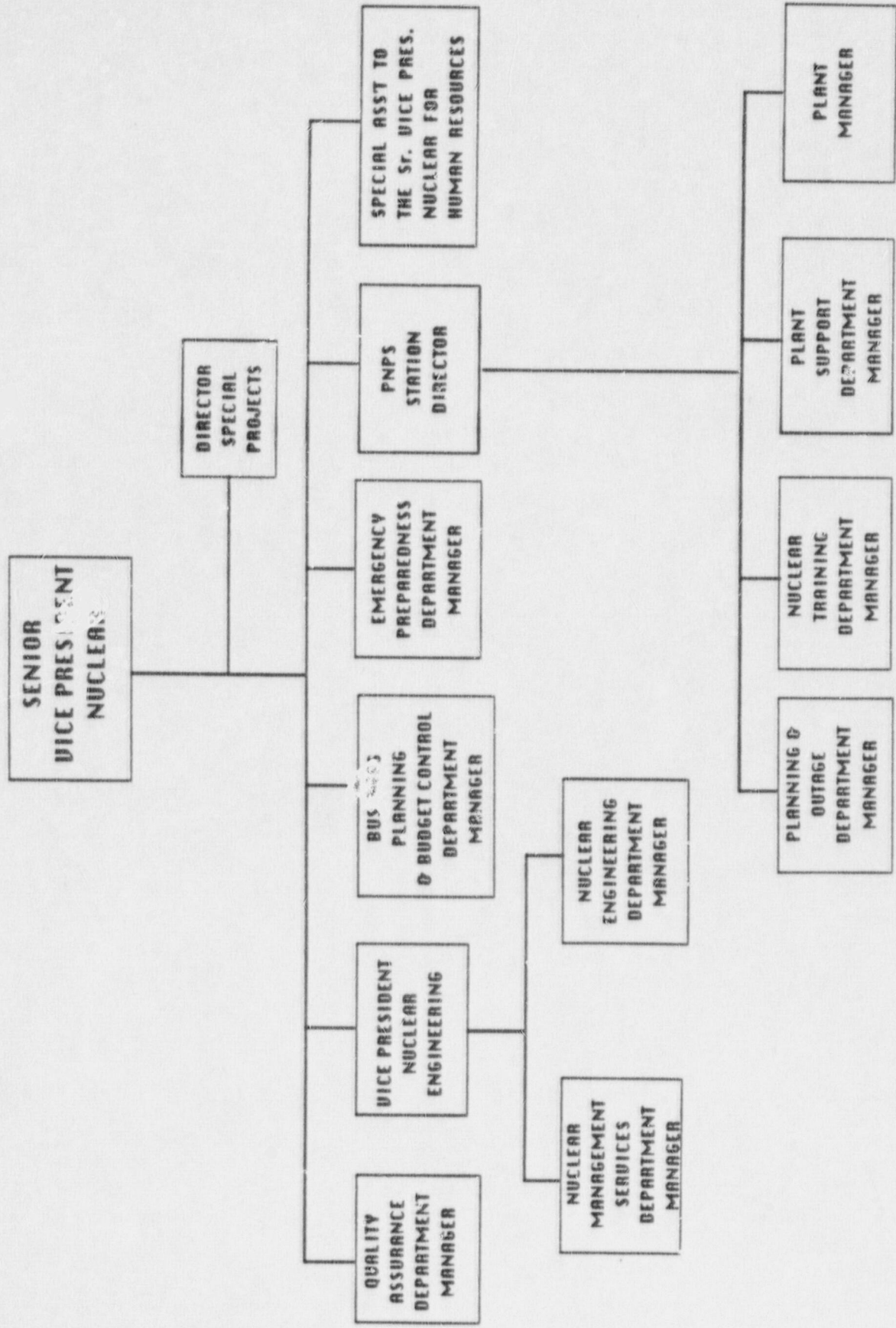
d. On-Shift Training Supervisor Signature: _____

BOSTON EDISON COMPANY

PILGRIM NUCLEAR POWER STATION

RALPH BIRD	SENIOR VICE PRESIDENT, NUCLEAR
KEN HIGHFILL	STATION DIRECTOR
RON VARLEY	MANAGER, EMERGENCY PREPAREDNESS
ED HOWARD	VICE PRESIDENT, NUCLEAR ENGINEERING

NUCLEAR ORGANIZATION CHART



CURRENT PLANT STATUS

- PLANT REFUELED
- REACTOR REASSEMBLED
- HYDROSTATIC TEST COMPLETE
- ILRT COMPLETE
- MAJOR MODIFICATION WORK COMPLETE
- PLANT CLEAN AND DECONTAMINATED

MAJOR OUTAGE PROJECTS

- APPENDIX R
- SECURITY SYSTEM UPGRADES
- PLANT SPECIFIC SIMULATOR
- TURBINE GENERATOR OVERHAUL
- REFURBISHMENT OF PLANT SYSTEMS
- DECONTAMINATION

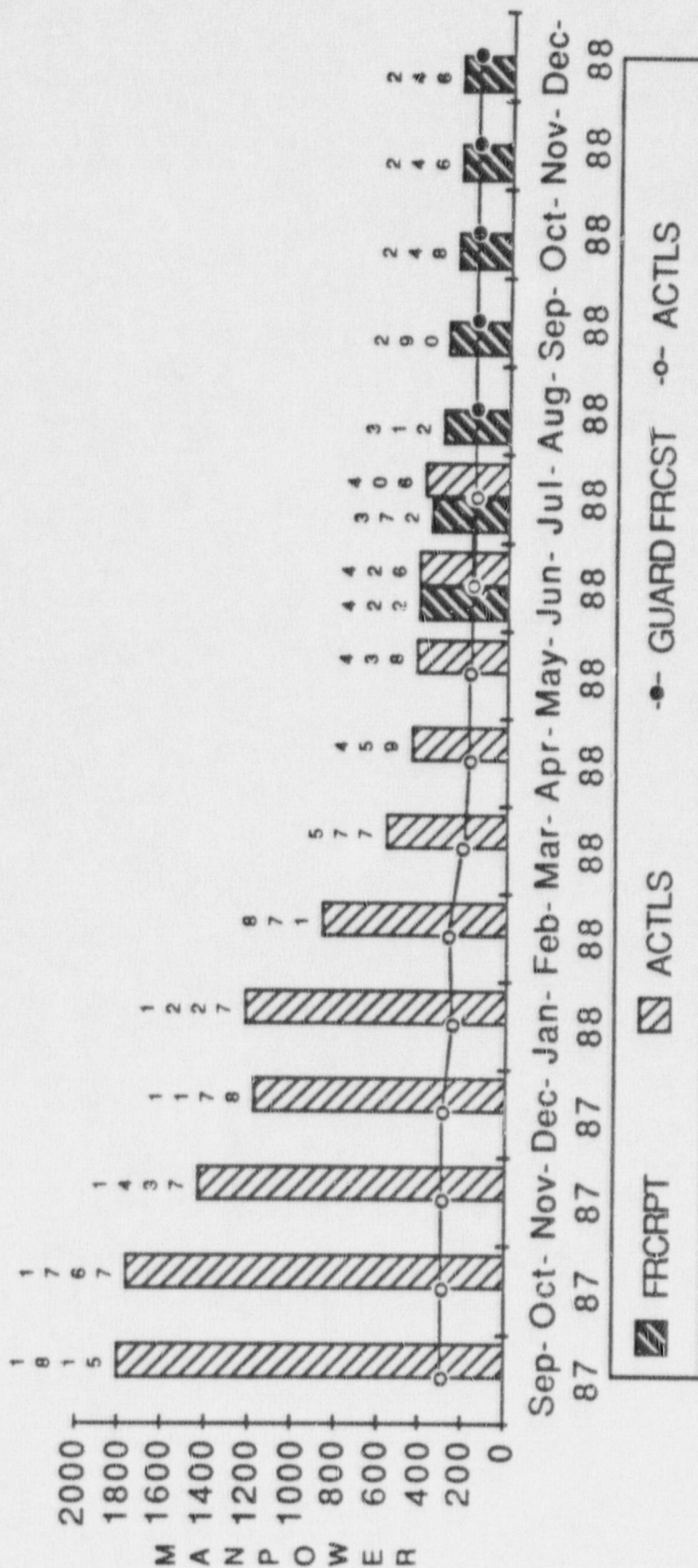
3.2 FACILITY PERFORMANCE

FUNCTIONAL AREA	CATEGORY LAST PERIOD *	CATEGORY THIS PERIOD **	RECENT TREND
1. Plant Operations	2	2	
2. Radiological Controls	3	3	Improving
3. Maintenance and Modifications	2	2	
4. Surveillance	3	2	
5. Fire Protection	3	2	
6. Emergency Preparedness	2	2	Improving
7. Security and Safeguards	3	2	
8. Engineering and Technical Support	1	1	
9. Licensing Activities	2	2	
10. Training and Qualifications Effectiveness	2	2	
11. Assurance Of Quality Outage Management and Modifications Activities	3 1	2 ***	

* November 1, 1985 to January 31, 1987 ** February 1, 1987 to May 15, 1988

*** Not evaluated as a separate functional area; findings relative to outage activities are integrated into "Engineering and Technical Support", "Maintenance and Modifications", and other functional areas as appropriate.

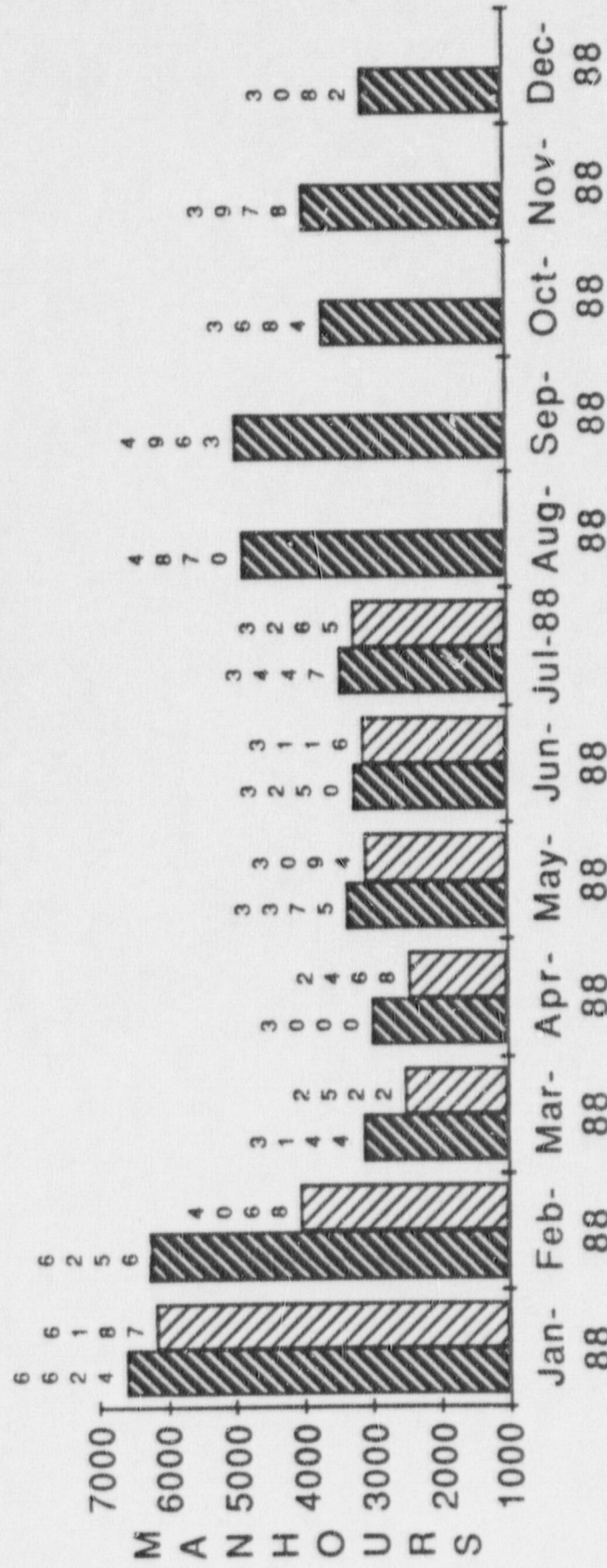
PILGRIM STATION NON-BOSTON EDISON RAMP DOWN



BP&BC 08/19/88

1pi8248a

PILGRIM STATION NUORG OVERTIME



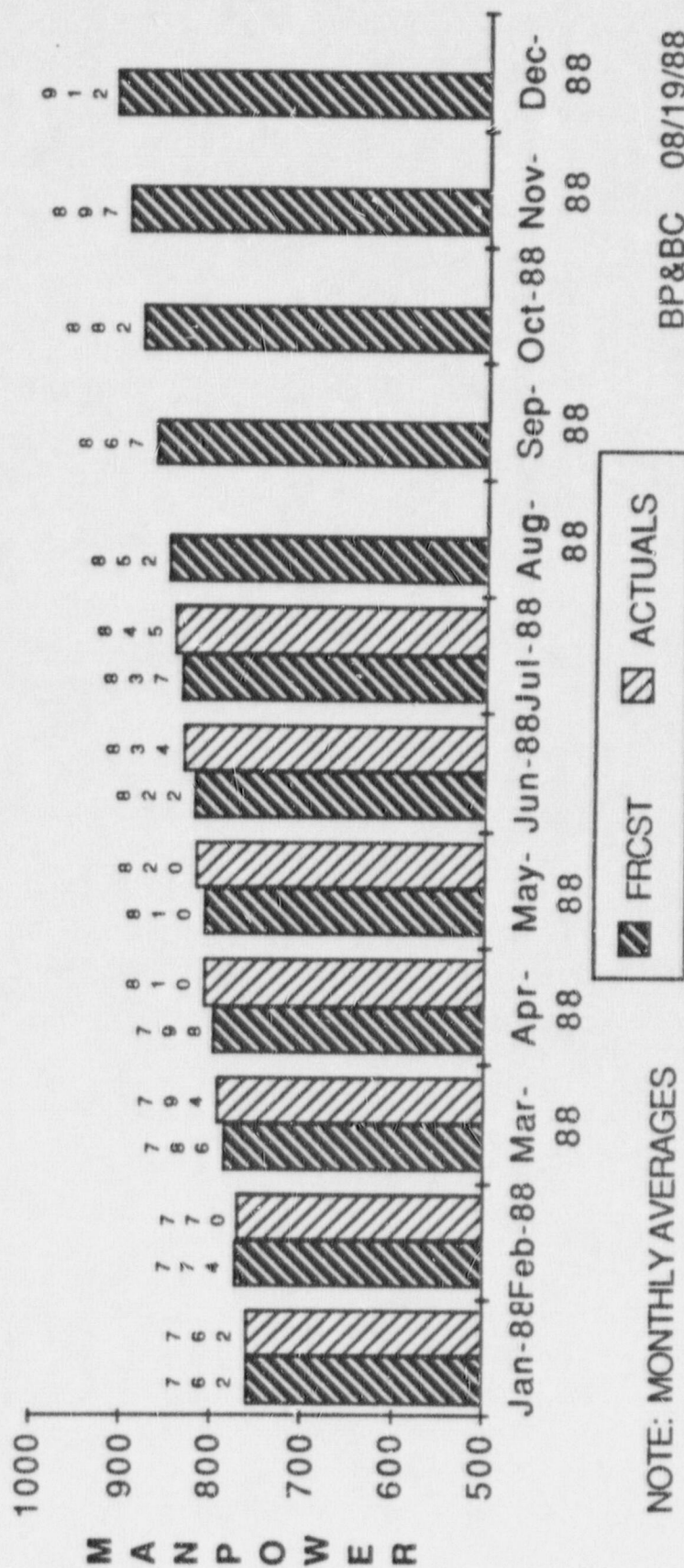
NOTE: JUN THRU DEC
REFLECTS BUDGET
REFORECAST

■ FRCST ■ ACTUALS

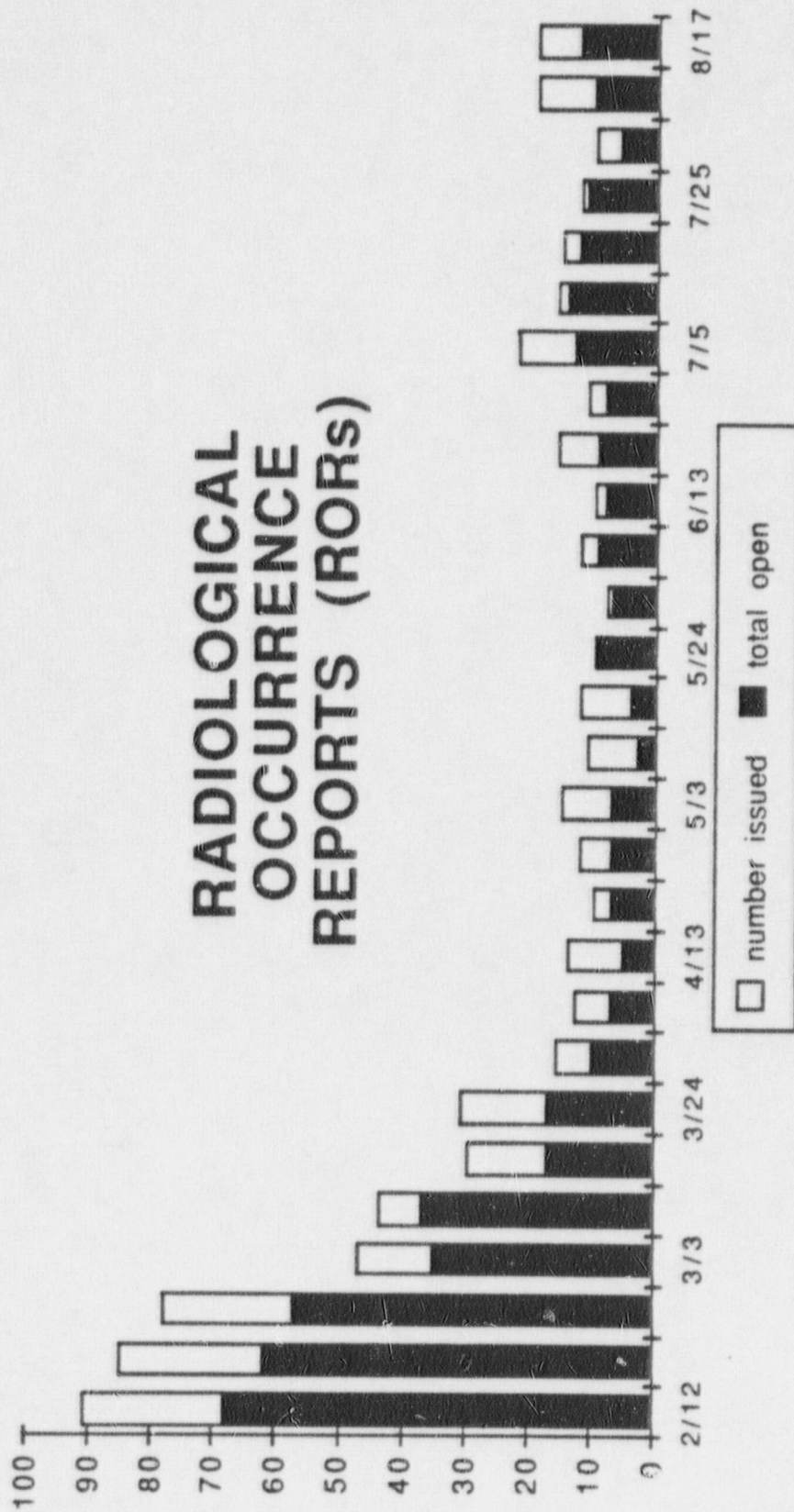
BP&BC 08/19/88

1pi8248b

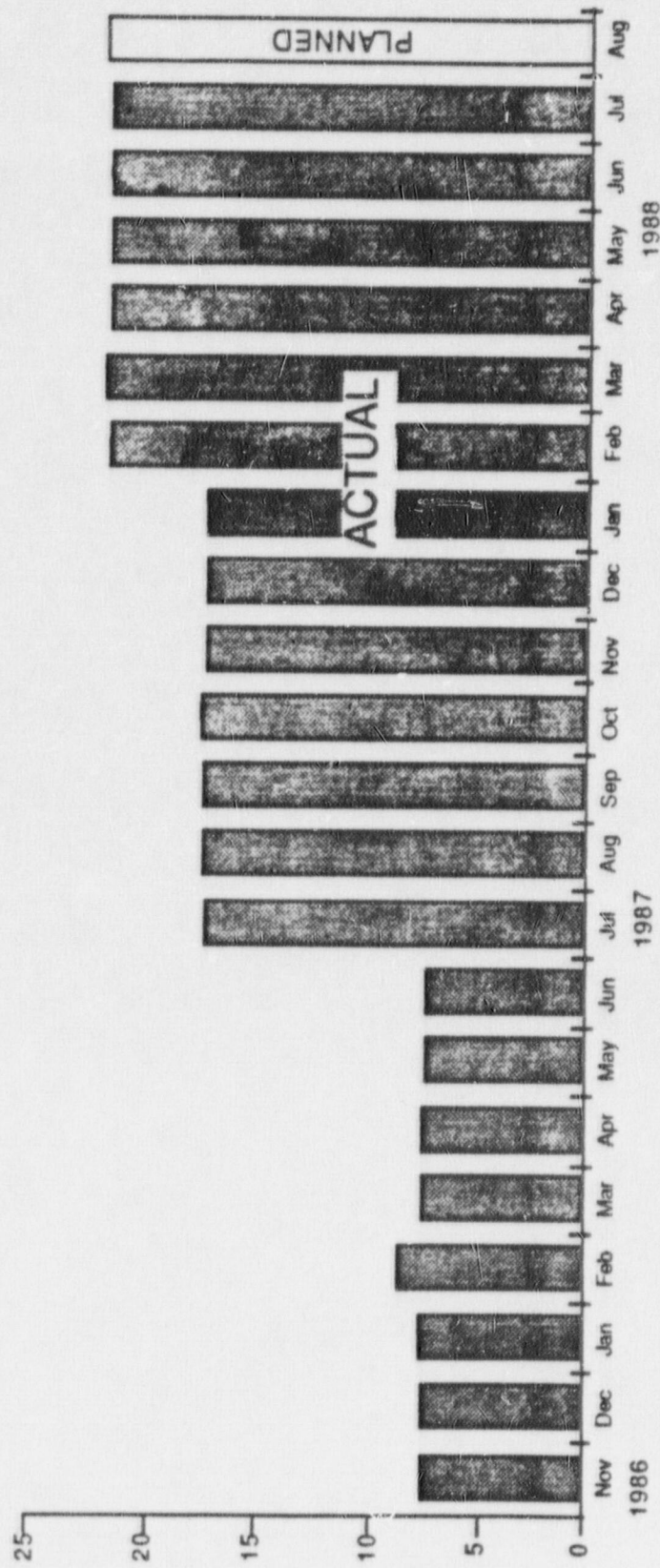
PILGRIM STATION NUORG STAFFING



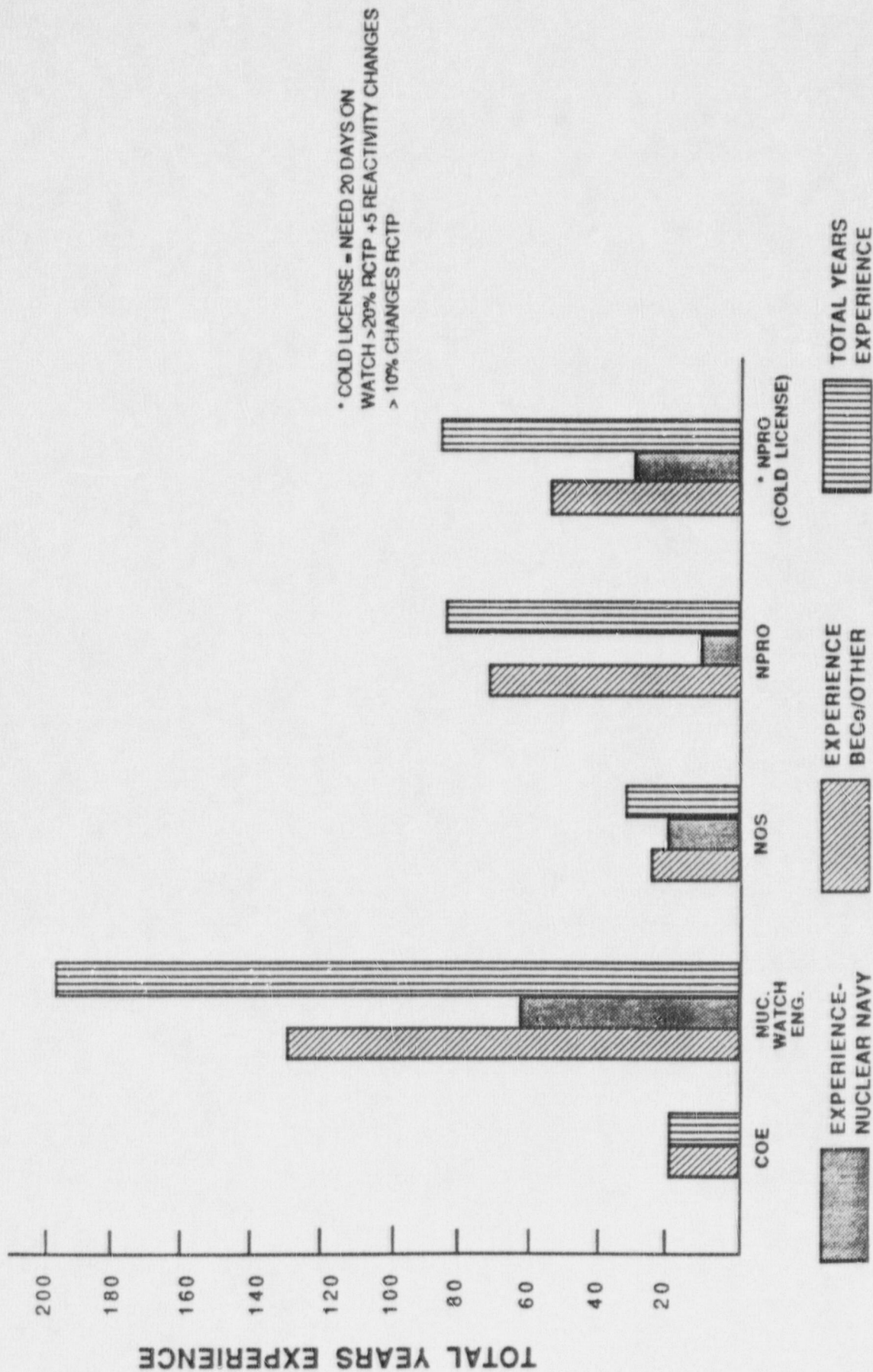
RADIOLOGICAL OCCURRENCE REPORTS (RORs)



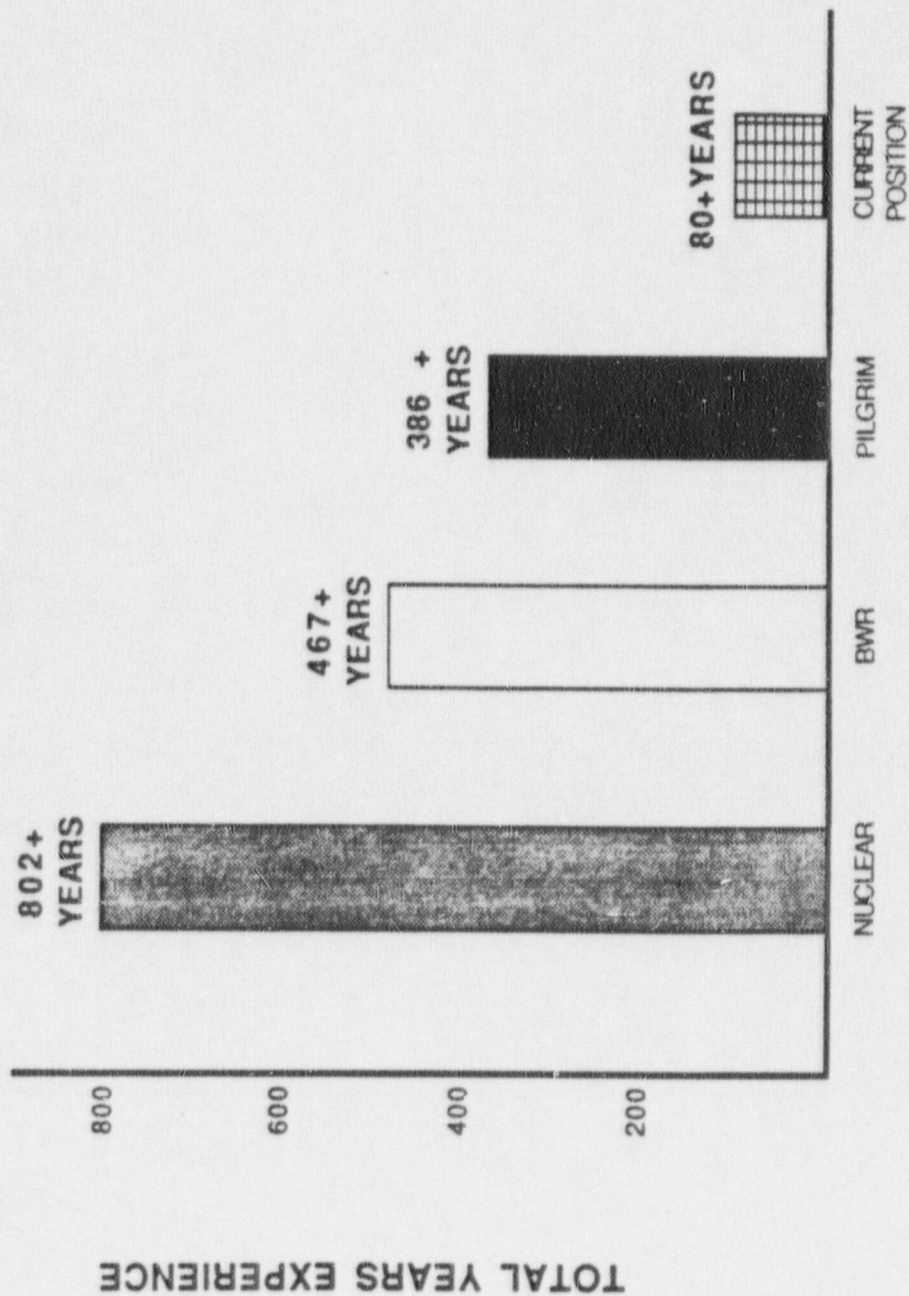
LICENSED OPERATOR STAFFING STATUS



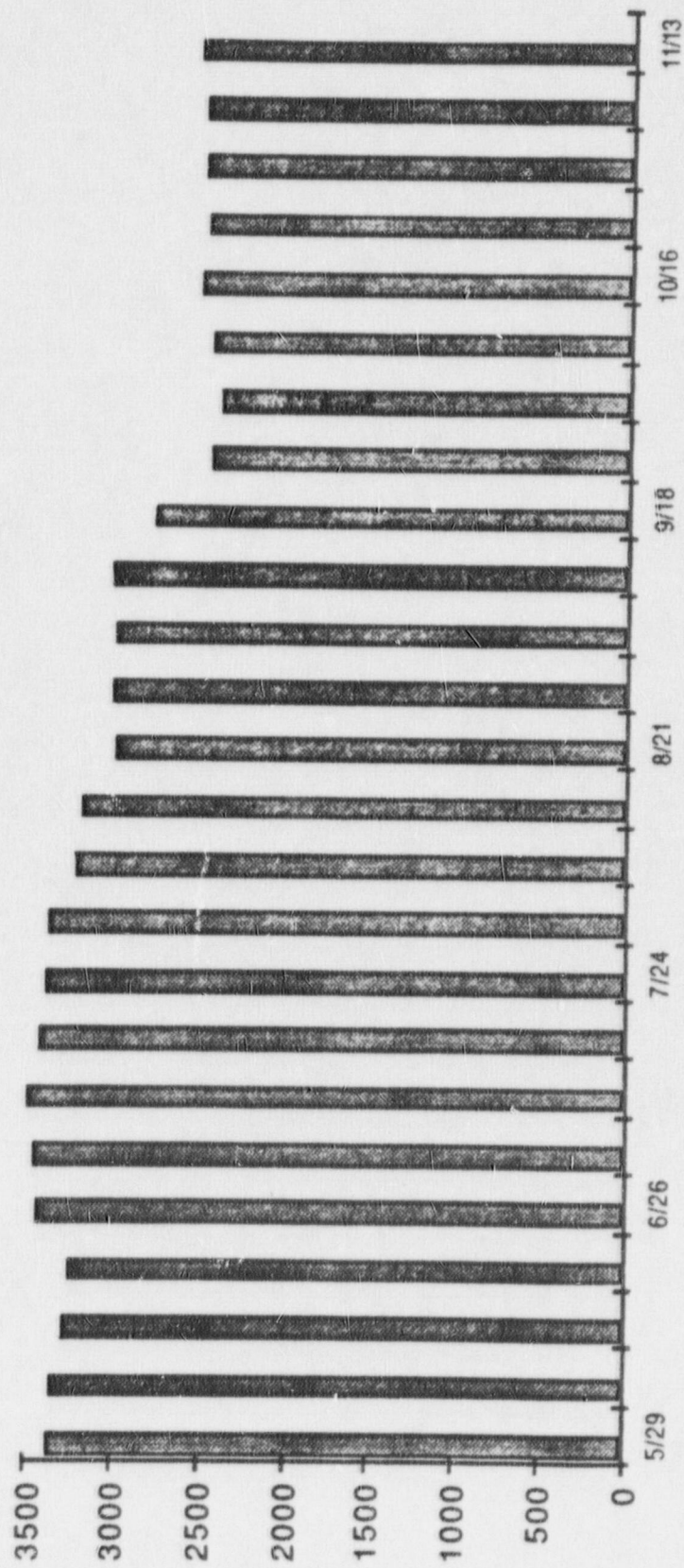
LICENSED PERSONNEL - YEARS TOTAL EXPERIENCE



PILGRIM NUCLEAR POWER STATION 49 KEY MANAGEMENT POSITIONS



TOTAL OPEN MRS

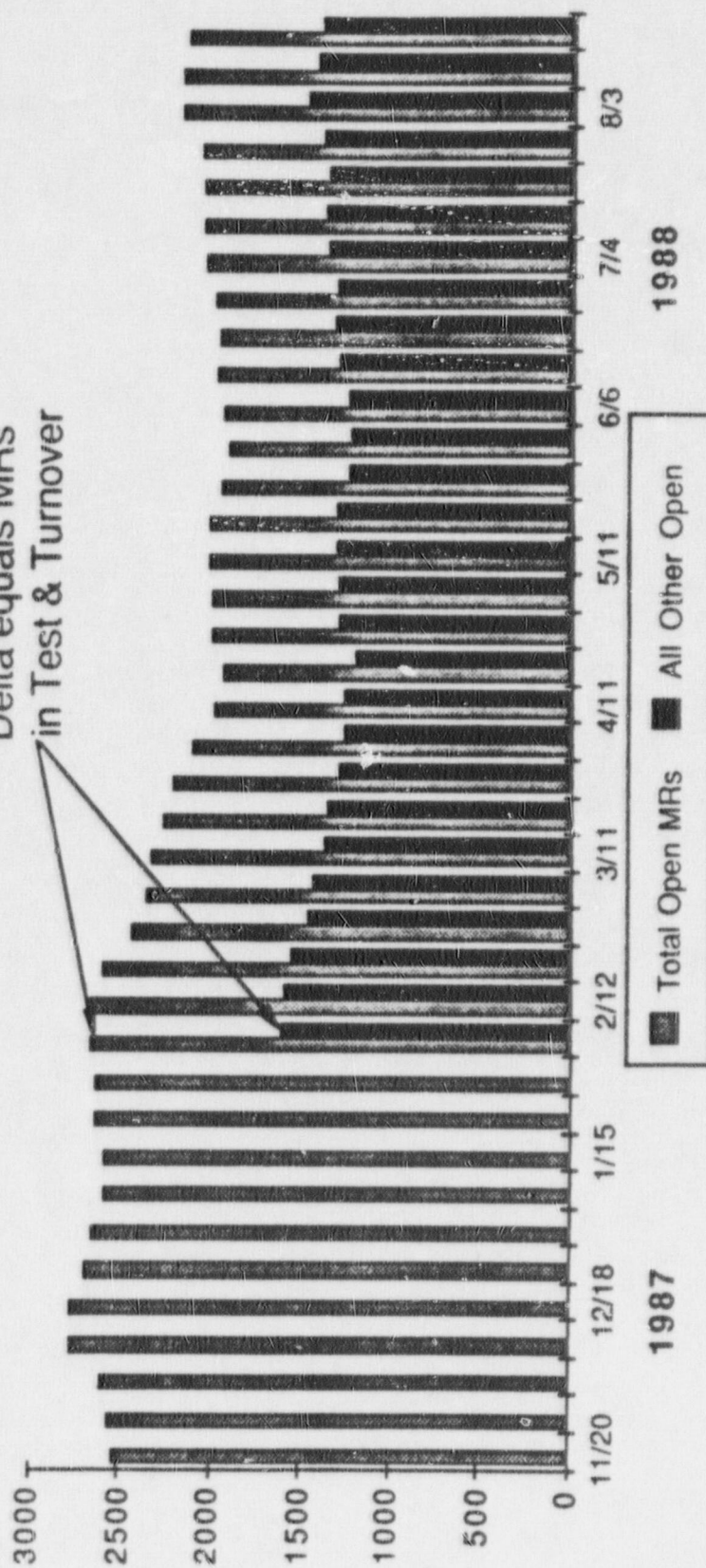


1987

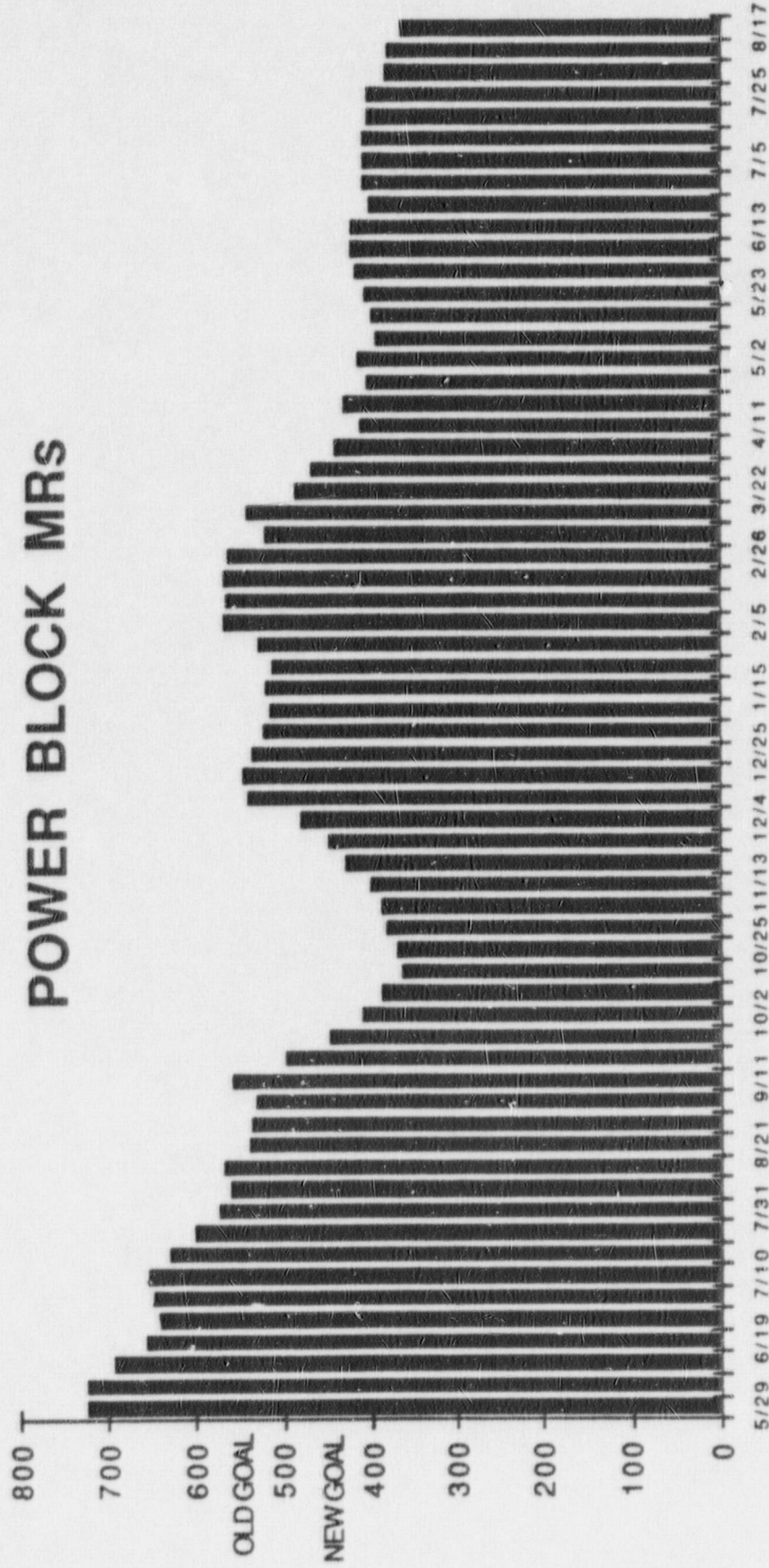
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TOTAL OPEN MRS

Delta equals MRS
in Test & Turnover



POWER BLOCK MRS



1987

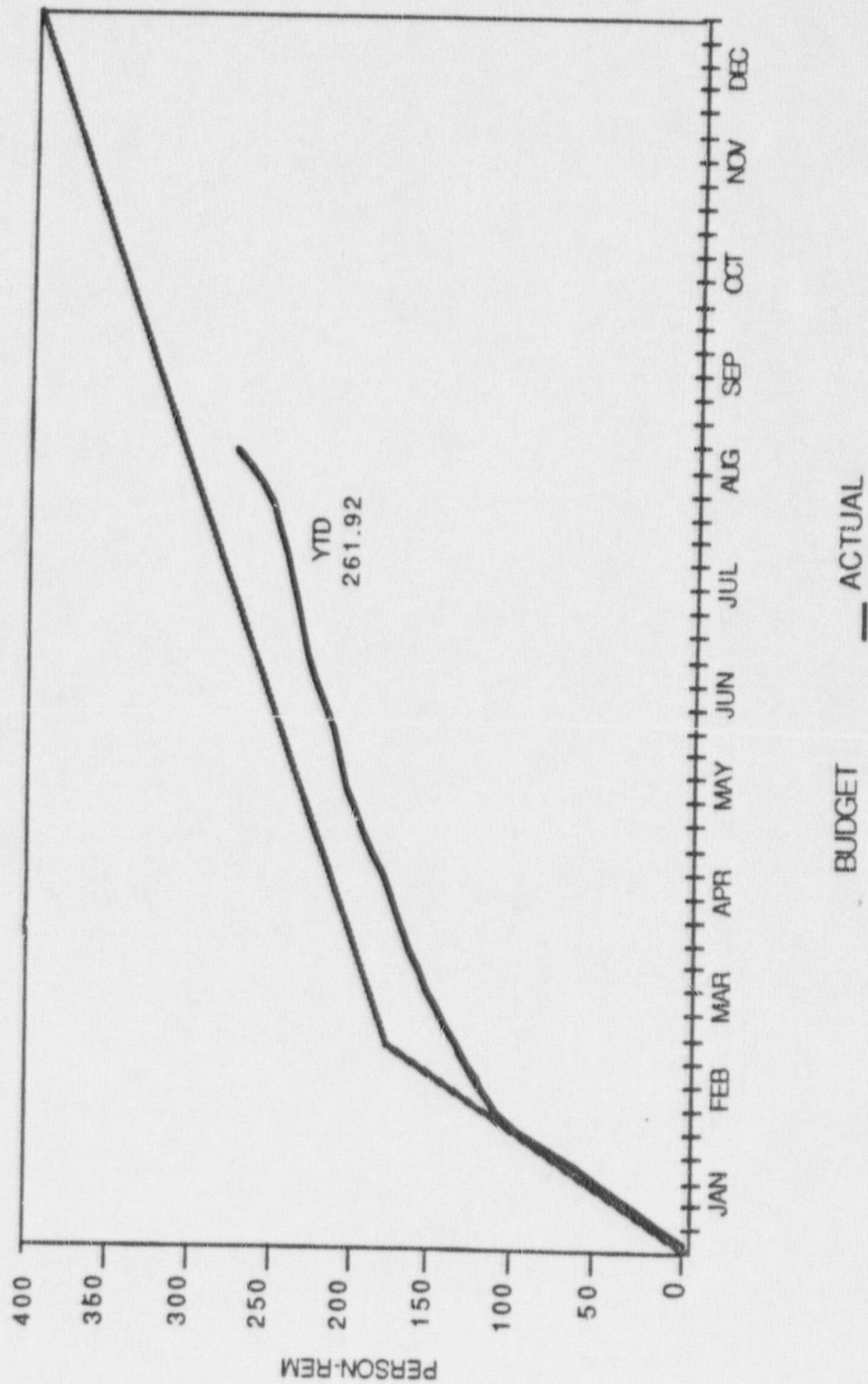
1988

1pi8258a

PILGRIM NUCLEAR POWER STATION
PERFORMANCE EXCELLENCE INDICATORS

(STATUS AS OF AUGUST 23, 1988)

ALARA TRACKING



RESOURCES PROVIDED BY BECo

- PROFESSIONAL EMERGENCY PLANNERS
- FUNDING OF CIVIL DEFENSE POSITIONS
- UPGRADING OF FACILITIES AND EQUIPMENT
- COMPENSATION FOR TRAINING

BOSTON EDISON COMPANY

SAFETY ENHANCEMENT PROGRAM

Presentation to ACRS

August 26, 1988

SAFETY ENHANCEMENT PROGRAM

BOSTON EDISON GOALS

Near Term Goal:

Identify And Implement Plant Improvements Responsive To NRC Draft BWR Severe Accident Containment Policy.
Revise Emergency Operating Procedures And Train Operators To Improve Operational Readiness And Ensure Effective Use Of Plant Capabilities In The Event Of An Accident.

Long Term Goal:

Perform A Comprehensive Safety Assessment Supported By Deterministic And Probabilistic Analyses Of Severe Accidents To Ensure That:

1. The Pilgrim Specific Response To Severe Accidents Is Well Understood
2. These Insights Are Effectively Used Within Boston Edison To Reduce The Probability And Consequences Of A Core Damage Accident
3. These Insights Are Available In Support Of Emergency Preparedness Planning

SAFETY ENHANCEMENT PROGRAM

Program Elements

- Safety Analyses - Both Probabilistic And Deterministic
- Plant Equipment Modifications
- Operations Procedure Improvements
- Training
- Management System Improvements

SAFETY ENHANCEMENT PROGRAM

Program Strategy And Approach

- Assemble The Most Experienced Technical Team Available
- Pursue A Parallel Effort To Identify Possible Improvements
 - Prepare Conceptual Design Based On Expert Judgment
 - Analyze Plant Capabilities-Evaluate Possible Improvements
- Integrate Conceptual Designs And Analytical Results Into Approved
 - Plant Modification
 - Procedures Improvements
 - Training Improvements
- Maintain Active Involvement In The Industry Programs

SAFETY ENHANCEMENT PROGRAM

Implementation Focus

- NRC Draft Severe Accident Containment Policy-BWR
- NRC And IDCOR BWR - Mark I Containment Reference Plant
 Studies
- Station Blackout Events
- ATWS Events
- Containment Performance Issues

SAFETY ENHANCEMENT PROGRAM

Results

Station Blackout

- Addition Of A Third Diesel Generator
- Procedure Changes To Extend DC Battery Operation
- Set Point Changes To Extend The Duration Of RCIC Operation
- Fire Water Inter-Tie to RHR Additional Source of RPV Makeup
- Suppression Pool Vent To Main Stack - Sized For Decay Heat Removal
- Improved Long Term Nitrogen Supply

SAFETY ENHANCEMENT PROGRAM

Results

Anticipated Transient Without Scram

- New Emergency Operating Procedures Based On Rev. 4 EPGs
- Extensive Training Of Operating Crews Using Pilgrim Specific Simulator
- Enriched Boron For SBLC System
- Automatic Depressurization System Logic Changes
- Feedwater Pump Trip
- Backup Recirc Pump Trip
- TRAC G Analysis For ATWS

SAFETY ENHANCEMENT PROGRAM

Results

Containment Performance

- Optimization Of Drywell Sprays Design Nozzle Change And Flow Reduction
- Fire Water Inter-Tie To RHR - AC Independent Source Of Drywell Spray
- Suppression Pool Vent To Main Stack-Containment Overpressure Control
- Improved Long Term Nitrogen Supply
- Experimental Testing

SAFETY ENHANCEMENT PROGRAM

Summary

- Pilgrim Safety Enhancement Program Addresses Complex Severe Accident Issues Both From Prevention And Mitigation Standpoints.
- Broad Technical Expertise Is Being Employed To Resolve Technical Issues.
- Improvements Are The Result Of The Most Comprehensive Safety Analysis Since The Issuance Of The Operating License.
- Improvements Are Investments In Safety Enhancing The Existing Plant Design And Operational Capabilities.
- Most Important Result - Proficiency Of Simulator Trained Operating Crews In Application Of New EOPs.
- Continuing Future Benefits Expected By Identifying Additional Applications To Further Improve Management Of Safety At PNPS.

Blough

Opening Remarks for William F. Kane
Public Meeting with Duxbury Board of Selectmen
October 29, 1987

- I would like to spend a few minutes to describe the review process the staff is using to determine if we will agree to a restart of the Pilgrim facility, and how we have organized this review.
- We have established a restart assessment panel which is made up of senior members from the NRC Region 1 and from the NRC Office of Nuclear Reactor Regulation, to coordinate review of the plan submitted by the company, the various safety evaluations that are being prepared, the results of the inspection activities, and, in fact, the entire scope of the NRC review.
- The panel's function is to provide guidance and focus to the NRC reviews. It is also the panel's responsibility to gather information and bring issues to senior NRC management for resolution as necessary.
- NRC review will include provisions for public input. A public meeting will be held in the Plymouth area at which members of the public will be able to comment on the Boston Edison Restart Plan. This meeting will be held after the NRC has received the details of the entire plan, and after the plan has been placed in local public libraries for public review. The time and place of the meeting will be announced sufficiently in advance of the meeting to allow members of the public time to develop their concerns. The meeting will be transcribed to ensure that the concerns are accurately reported to the staff. The NRC will also make provisions for accepting written testimony from those unable to attend the meeting. NRC will consider all the comments, as appropriate, for enhancing NRC review and inspection activities. A second meeting will follow, in order for the staff to present its disposition of those concerns.
- To the extent that the concerns are directly related to Pilgrim and not related to generic issues that may be beyond the scope of the assessment panel's charter, we would attempt to address those concerns directly in the evaluation that the staff is completing.
- The NRC Staff will offer to hold a public meeting with Senator Golden and others to answer their questions about the Restart Plan and the NRC review process.

- At the appropriate time, NRC:RI will conduct a Restart Readiness Inspection. Followup inspections will be conducted as necessary. We will use a team inspection approach. The Commonwealth has expressed interest in providing an observer on that inspection. We are discussing that with the Commonwealth.
- We do not intend to accept commitments or programs as the sole basis for restart. We must see positive results, which indicate continuing performance improvements.
- The NRC Restart Panel will make recommendations to NRC Senior Management based upon the results of reviews and inspections.
- Once NRC Senior Management is satisfied that the plant is ready for restart, the staff would recommend proceeding with a Commission meeting and vote.
- If permission to restart is granted, the NRC will have extensive on-site inspection coverage during the restart and the Power Ascension Program.
- Recent NRC inspections have found that BECo has made significant progress in the areas of maintenance, surveillance, and fire protection. Problems continue to be observed in the area of security and safeguards.

As many of you may be aware, numerous elected officials filed a request for an order and hearing last year, under 2.206 of our regulations, due to deficiencies at the Pilgrim plant in management, emergency planning, and the adequacy of containment. The staff of the NRC has responded to that earlier petition and stated that all issues in that petition will be addressed by the NRC prior to restart; but that so far, it did not appear that their resolution required the issuance of an order, or an adjudicatory hearing. That decision has been appealed in the federal courts.

Most recently, the Governor and Attorney General of Massachusetts have requested, under 2.206 of our regulations, based on similar information, that the Commission condition restart on the preparation of a site-specific Probabilistic Risk Assessment, on an adjudicatory hearing on the numerous outstanding issues, and that Boston Edison not be permitted to take any further actions toward restart (their power ascension program) until such a hearing is held.

That request is currently being considered by the NRC and we are not prepared to address the merits of that request during this meeting. We are prepared, however, to address the technical status of the issues that formed the

bases for both requests: management, containment, and emergency preparedness.

NRC Review for Determination of Restart

- NRC has ongoing series of specialist inspections and resident inspections.
- NRC will review the complete Restart Plan when received.
- We will hold public meetings in local area to receive public comment on the Restart Plan. Later we will provide feedback on the disposition of public comments.
- At the appropriate time, NRC:RI will conduct a Restart Readiness (Diagnostic-Type) Team Inspection led by a manager from Region I. Followup will be conducted as needed.
had offered to provide the petitioners filing of a court appeal of the NRC's order on their 2.25.6 petition
- NRC staff ~~will~~ hold a public meeting with Senator Golden and other petitioners to answer any questions they may have. *X*
- The NRC Restart Panel will make recommendations to NRC Senior Management ~~as~~ based on results of reviews and inspections.
- Once NRC Senior Management is satisfied that the plant is ready for restart, the staff would recommend proceeding with a Commission meeting and vote.
- If Restart permission is granted, NRC will have extensive onsite inspection coverage of restart and power ascension.