U. S. NUCLEAR REGULATOFY COMMISSION

REGION V

Report No. 50-397/83-11

Docket No. 50-397 License No. CPPR-93

Licensee: Washington Public Power Supply System (WPPSS)
P. O. Box 968
Richland, Washington 99352

Facility Name: Washington Nuclear Project No. 2 (WNP-2)

Meeting Location: NRC Region V Office, Walnut Creek, California

Meeting Conducted: March 30, 1983

Approved by: D. M. Sternberg 4/14/83
D. M. Sternberg, Chief Date Signed
Reactor Projects Branch No. 1

1. Attendees

a. Nuclear Regulatory Commission Staff

R. H. Engelken, Regional Administrator
J. B. Martin, Regional Administrator (Prospective)
B. H. Faulkenberry, Deputy Regional Administrator
A. D. Johnson, Enforcement Officer
D. M. Sternberg, Chief, Reactor Projects Branch No. 1
T. W. Bishop, Chief, Reactor Projects Branch No. 2
R. T. Dodds, Chief, Reactor Projects Section No. 1

b. Washington Public Power Supply System

R. L. Ferguson, Managing Director
W. C. Bibb, Director, Power Generation
R. G. Matlock, Program Director, WNP-2
R. B. Glasscock, Director, Licensing and Assurance
J. R. Honekamp, Technical Assistant
R. T. Johnson, WNP-2 Project QA Manager
C. S. Carlisle, WNP-2 Deputy Program Director
H. A. Crisp, WNP-2 Construction Manager

2. Meeting Summary

The meeting was held at the request of the Supply System and was intended to provide an overview of the current status of Washington Nuclear Project No. 2.

Representatives of the Supply System provided briefings in the areas identified below, using a briefing package, provided as Attachment 1:

Construction Status

Startup Program Status

Quality and Safety Assurance Program

Licensing Status

WNP-2 Plant Verification Activities

During the briefing several points of discussion emerged. The substantive issues discussed are identified below:

a. Supply System Reduction in Project Work Force

The licensee (Matlock) stated that with the completion of construction activities there will be substantial reduction in the project work force. To assure that open quality concerns are properly identified Bechtel and Supply System Quality Assurance organizations are requesting that individuals terminating employment identify and document any unresolved quality issues or

concerns. It was stated that 90 individuals had recently been laid off and that this "quality clearing house" technique has identified a number of issues. In addition, the licensee (Matlock) stated that two telephone "hot-lines" have been established and working for some time. The hot-lines provide an opportunity for individuals to express quality concerns (anonymously, if desired).

b. Pressures to Meet the Project Schedule

The NRC (Dodds) noted the relatively short time remaining to complete scheduled project work. This situation is compounded in view of the imminent management changes within the licensee's organization. Licensee management was requested to comment on this concern. The licensee (Ferguson) responded, stating that the Supply System management transition would be smooth and that sufficient man power is being provided to complete major project actions approximately one month before fuel load. This action will allow sufficient time to "clean up" remaining items and permit time for an overall assessment of readiness for fuel load.

c. Licensee Handling of Select Generic Issues

NRC representatives (Engelken/Sternberg) requested that the licensee identify what action they had taken in the areas of stress corrosion cracking of BWR piping; failures in Westinghouse turbines; and recently identified maintenance problems related to PWR reactor trip breakers.

The licensee (Matlock) stated that all the safe ends on the WNP-2 reactor vessel have been changed to reflect the state-of-the-art design and materials to eliminate generic concerns with stress corrosion pipe cracking. In addition, the licensee has developed a stringent policy on water chemistry to further reduce the potential for cracking. The revised water chemistry criteria are more restrictive than those identified in the standard technical specifications. The licensee will evaluate these new criteria during preoperational testing. Formal implementation of the criteria will be addressed by the licensee after the testing.

In the area of Westinghouse turbine problem, The licensee (Ferguson) stated that they have been participating in resolution of the generic concerns through an owners group. It was stated that problems have been avoided in some foreign based turbines which utilized improved water chemistry programs. The licensee is currently working with Westinghouse in this area.

In reference to the recently identified PWR reactor trip breaker problems, the licensee (Bibb) stated that they are examining their maintenance program to avoid similar problems at the WNP-2 facility.

d. Staged Licensing

One of the licensee's visual aids provided a graph of reactor power ascension versus time. The NRC (Sternberg) noted that the graph, as shown, did not provide a step at the five percent power level and inquired whether the licensee recognized the typical NRC license "hold" at the five percent power level. It was stated that all recently license. power reactors have proceeded to full power under a stepped process (initial NRC approval to load fuel and go to five percent power, followed by NRC authorization to go to full power). The licensee (Ferguson) stated that their discussions with NRR, to date, have been directed towards one license, with no NRC holds or further approvals required at the five percent plateau. The licensee (Ferguson) agreed to review this matter with Mr. H. Denton of NRR.

e. Licensee Verification Programs

In reviewing the licensee's design verification program the NRC (Martin) questioned whether the level of involvement of the licensee's independent overviewing consultant (Technical Audit Associates, TAA) would allow the consultant to support the conclusion of the verification program. The licensee (Honekamp) stated that TAA has reviewed the design verification program plan and identified program changes they require to be able to support the program conclusion. These changes have been implemented by the licensee and several TAA audits have been performed to assess implementation of the program. The licensee (Honekamp) indicated that one 50.55(e) reportable design deficiency has been identified by the review to date. Other, less significant, concerns have also been identified. The generic implications of these findings have not yet been assessed.

The NRC (Bishop) noted that the licensee has not received NRR endorsement of the specific design verification program. The licensee (Ferguson) stated that the subject of NRR endorsement would be reviewed with Mr. H. Denton of NRR.

The role of TAA in the Quality Verification Program (QVP) was revewied by the licensee. This program is being performed to verify the quality of construction work completed prior to June 1980, in response to a 1980 50.54(f) letter from the NRC. In this program the licensee has not requested that TAA review the adequacy of the program. Their role has been limited to assessing the adequacy of program implementation. The NRC (Martin) noted that this limited role may not allow TAA to respond to the overall concern (i.e., based upon the QVP, is there reasonable assurance that WNP-2 has been properly constructed?).

The NRC (Sternberg) reiterated to licensee management that the QVP must demonstrate overall compliance with the licensee's original, NRC approved, response to the 1980 50.54(f) letter. The licensee (Ferguson) committed to summarize their changes from their original

commitments and report to the NRC:RV by mid April 1983. (Subsequent to the meeting this commitment was clarified, wherein the licensee stated that the changes from the original program would be provided to the NRC, in writing, by April 15, 1983).

The NRC (Martin) stressed the necessity of a comprehensive and a thorough reverification program, indicating that this program is being carefully examined by the NRC and will be of significant importance in reaching a licensing decision for WNP-2. The licensee (Ferguson) stated that they are giving this matter full attention.

f. Emergency Response Interface

While discussing the licensee's emergency response readiness, the NRC (Martin) asked the name of the individual within Washington State government who will function as the interface between the licensee and the state in an emergency situation. Licensee representatives were unable to identify this individual, but stated that this information would be provided to the NRC at a later date. The NRC (Martin) stated that the area of emergency response will be closely examined.

3. In conclusion licensee representatives stated that the meeting had been beneficial and recommended that another management meeting of this nature be conducted in approximately one month. NRC representatives concurred.

REGION V—SUPPLY SYSTEM

MEETING

MARCH 30, 1983

AGENDA
NRC/SUPPLY SYSTEM MEETING
MARCH 30, 1983 8:00 a.m.
WALNUT CREEK, CA

• INTRODUCTION	R. L. FERGUSON
• STATUS OF WNP-2 CONSTRUCTION	R. G. MATLOCK/ C. S. CARLISLE
• STATUS OF WNP-2 STARTUP PROGRAM	W. C. BIBB
• QUALITY AND SAFETY ASSURANCE PROGRAM	R. B. GLASSCOCK
• L ENSING STATUS	R. B. GLASSCOCK
• WNP-2 PLANT VERIFICATION	J. R. HONEKAMP
• SUMMARY	~~D. W. MAZUR~~ (NOT PRESENT)

NUCLEAR PROJECT NO. 2

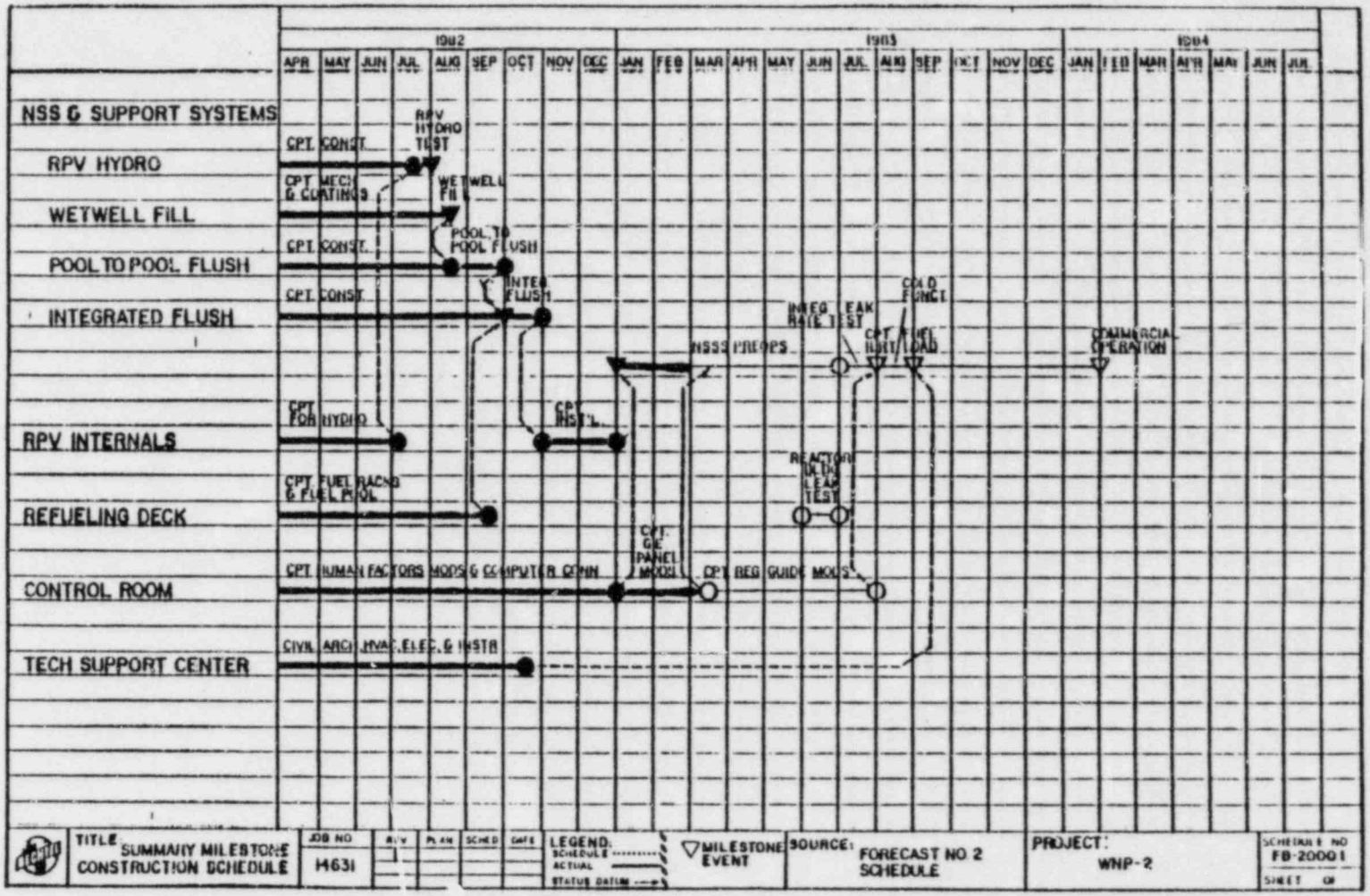
VITAL STATISTICS

TYPE	**BOILING WATER REACTOR (BWR)**
OUTPUT CAPACITY	**1103 MEGAWATTS**
COOLING TOWERS	**MECHANICAL DRAFT**
REACTOR SUPPLIER	**GENERAL ELECTRIC**
TURBINE GENERATOR SUPPLIER	**WESTINGHOUSE**

82048

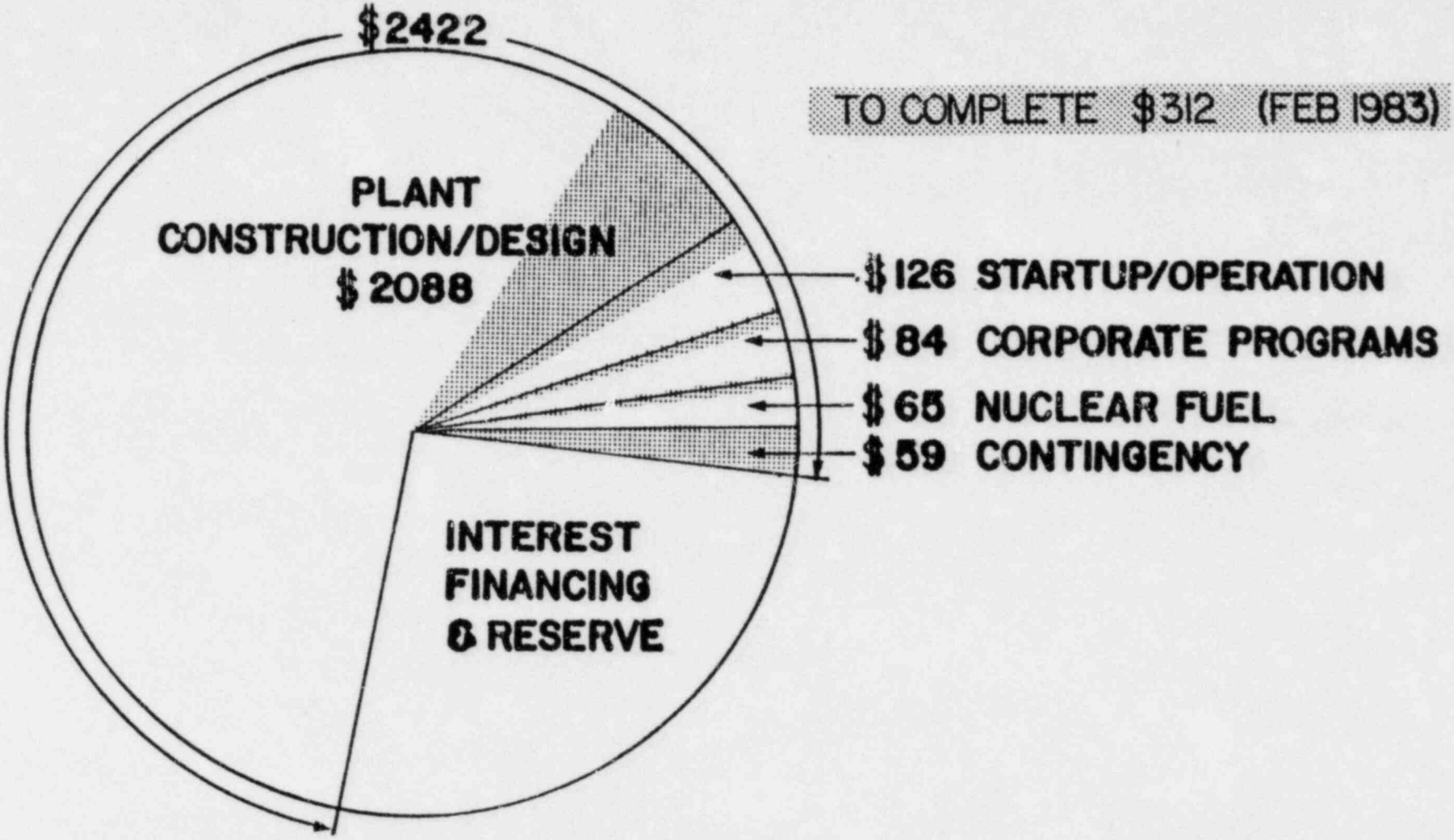
WNP-2 PROGRAM

R.G. MATLOCK



NUCLEAR PROJECT NO. 2

TOTAL PROJECT COST (MILLIONS)



CONTROL ROOM STATUS

- Remaining design tasks are scheduled to complete by April, 1983
- Control Room leak test to begin May, 1983
- Physical work currently scheduled for completion on June 1, 1983
  - Penetration sealing is in progress with a forecast completion in April, 1983
  - Installation of the Halon fire protection system is in progress with a forecast completion(including the raised floor) in May, 1983
  - Separation walkdowns complete, modifications to complete in April, 1983

DRYWELL STATUS

- NSS Systems in the drywell were released for preoperational testing in February, 1983
- Painting is progressing on schedule at 25% complete with a scheduled completion in June, 1983
- Reflective Insulation fabrication is in progress
  - Insulation installation has been started on the upper Reactor Pressure Vessel
  - Piping insulation will start in March, 1983 with a scheduled completion in August, 1983
- Pipe whip installation is 90% complete with bolt up and alignment completion forecast in July, 1983

TO-GO MILESTONES

MILESTONE	START DATE
• 500 KV Backfeed	03/14/83
• Fuel Delivery	05/23/83
• Secondary Containment Leak Test (SCLT)	05/16/83
• Primary Containment Integrated Leak Test (PCILRT)	07/04/83
• Loss of Power and Integrated ECCS Testing	07/30/83
• Fuel Load	09/01/83

MAJOR ACCOMPLISHMENTS SINCE APRIL 1982

05/82 COMPLETED MECHANICAL WORK IN WETWELL.

06/82 COMPLETED VACUUM TESTS OF MAIN CONDENSER SYSTEM.

08/82 COMPLETED HYDROSTATIC TESTS OF THE REACTOR PRESSURE VESSEL.

09/82 COMPLETED AND FILLED THE WETWELL.

10/82 COMPLETED POOL-TO-POOL FLUSHES.

10/82 COMPLETED CORE SPRAY PATTERN TESTS FOR LPCS, HPCS.

11/82 COMPLETED THE INTEGRATED FLUSH.

11/82 COMPLETED THE REFUELING DECK.

11/82 COMPLETED CONSTRUCTION OF THE TECHNICAL SUPPORT CENTER.

12/82 COMPLETED INSTALLATION OF THE REACTOR INTERNALS.

12/82 COMMENCED PREOPERATIONAL TESTING OF SYSTEMS.

01/83 COMPLETED FULL LOAD TESTING OF THE HPCS DIESEL GENERATOR.

02/83 COMPLETED RELIABILITY TESTING OF THE HPCS DIESEL GENERATOR.

LICENSING STATUS

• APRIL 1982	SAFETY EVALUATION REPORT (SER) ISSUED BY NRC - 28 OPEN ISSUES
• JUNE 1982	GEOLOGY/SEISMOLOGY ISSUE RESOLVED WITH NRC
• AUGUST 1982	SER AMENDMENT NO. 1 ISSUED - 16 OPEN ISSUES
• AUGUST 1982	SPECIAL NUCLEAR MATERIALS LICENSE ISSUED
• OCTOBER 1982	ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS) REVIEW COMPLETED - RECOMMENDED FULL POWER, FULL TERM LICENSE
• DECEMBER 1982	SER AMENDMENT NO. 2 ISSUED ~ 10 OPEN ISSUES
• FEBRUARY 1983	REQUEST BY "COALITION FOR SAFE POWER" FOR PUBLIC HEARING ON EXTENSION OF THE WNP-2 CONSTRUCTION PERMIT DENIED BY NRC.

COMMODITY INSTALLATION STATUS

Commodity	Percent Complete October 1981	Percent Complete March, 1983
Piping		
Large Pipe (LF)	96	99
Large Pipe Welds (EA)	92	98
Large Pipe Valves (EA)	92	99
Large Pipe Hangers (EA)	89	97
Small Pipe (LF)	84	96
Electrical		
Cable Tray (LF)	100	100
Conduit (LF)	69	97
Wire & Cable (LF)	68	97
Connections (EA)	62	89
Instrumentation		
Tubing (LF)	40	98
PI Piping SS (LF)	50	97

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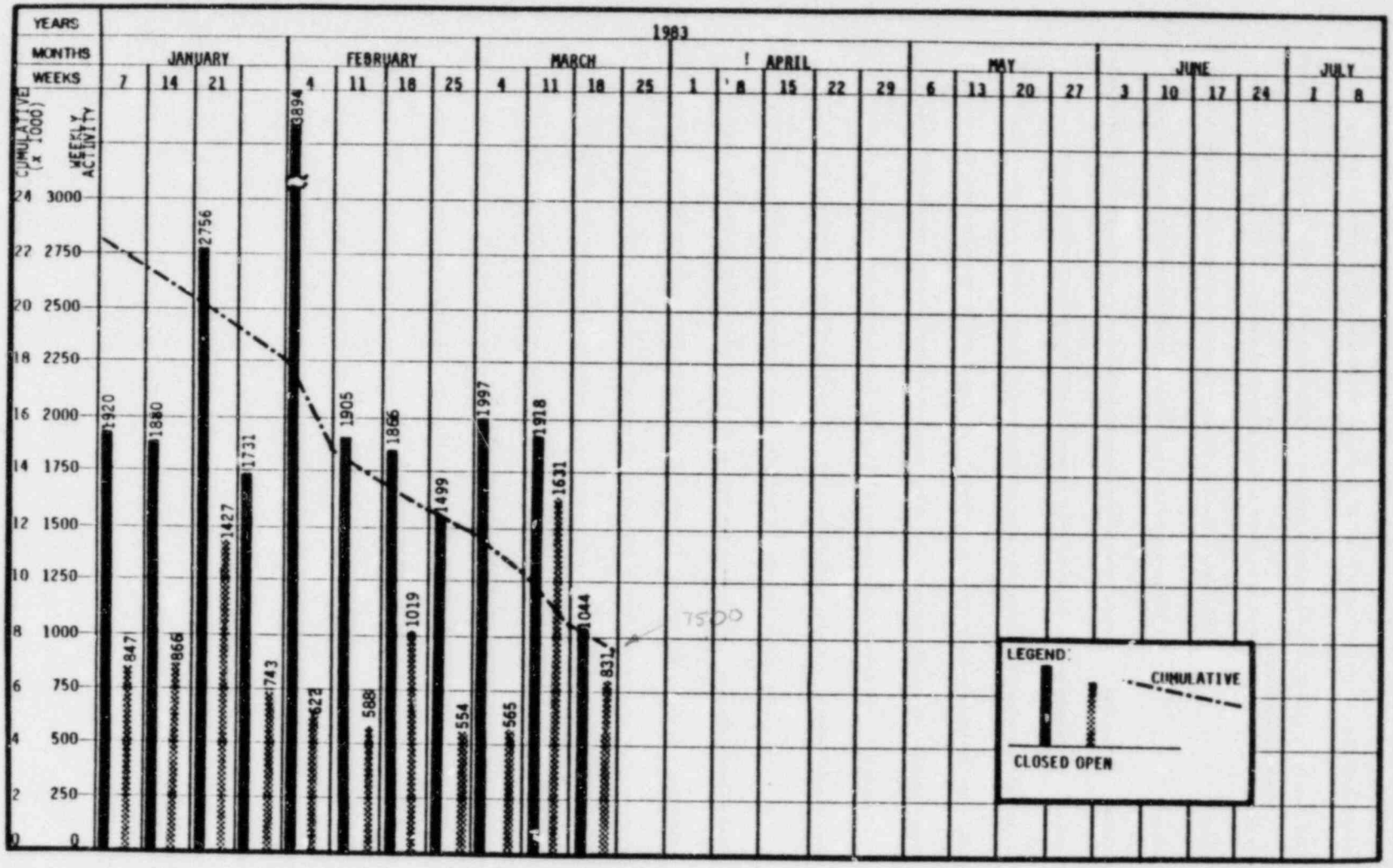
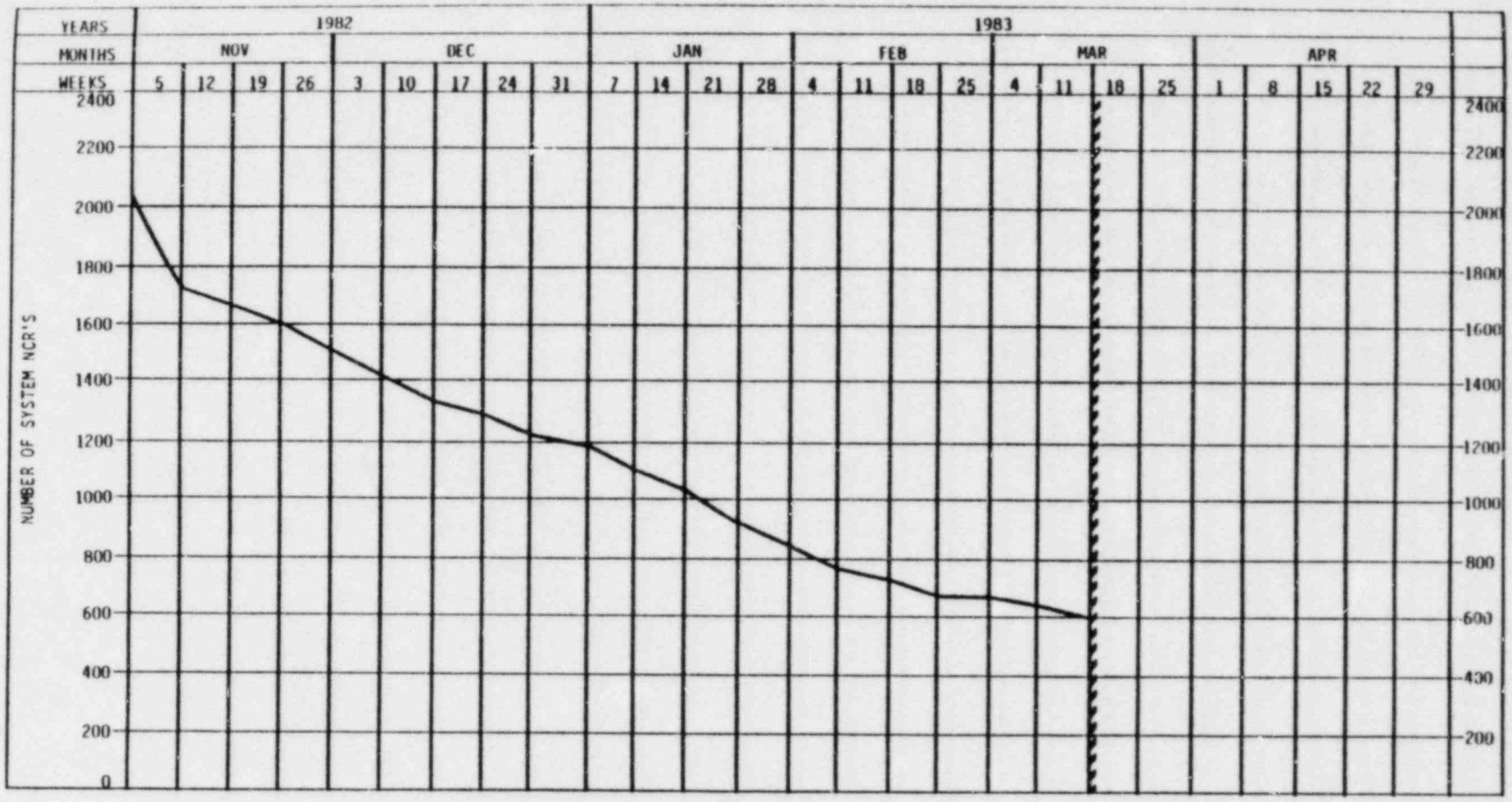
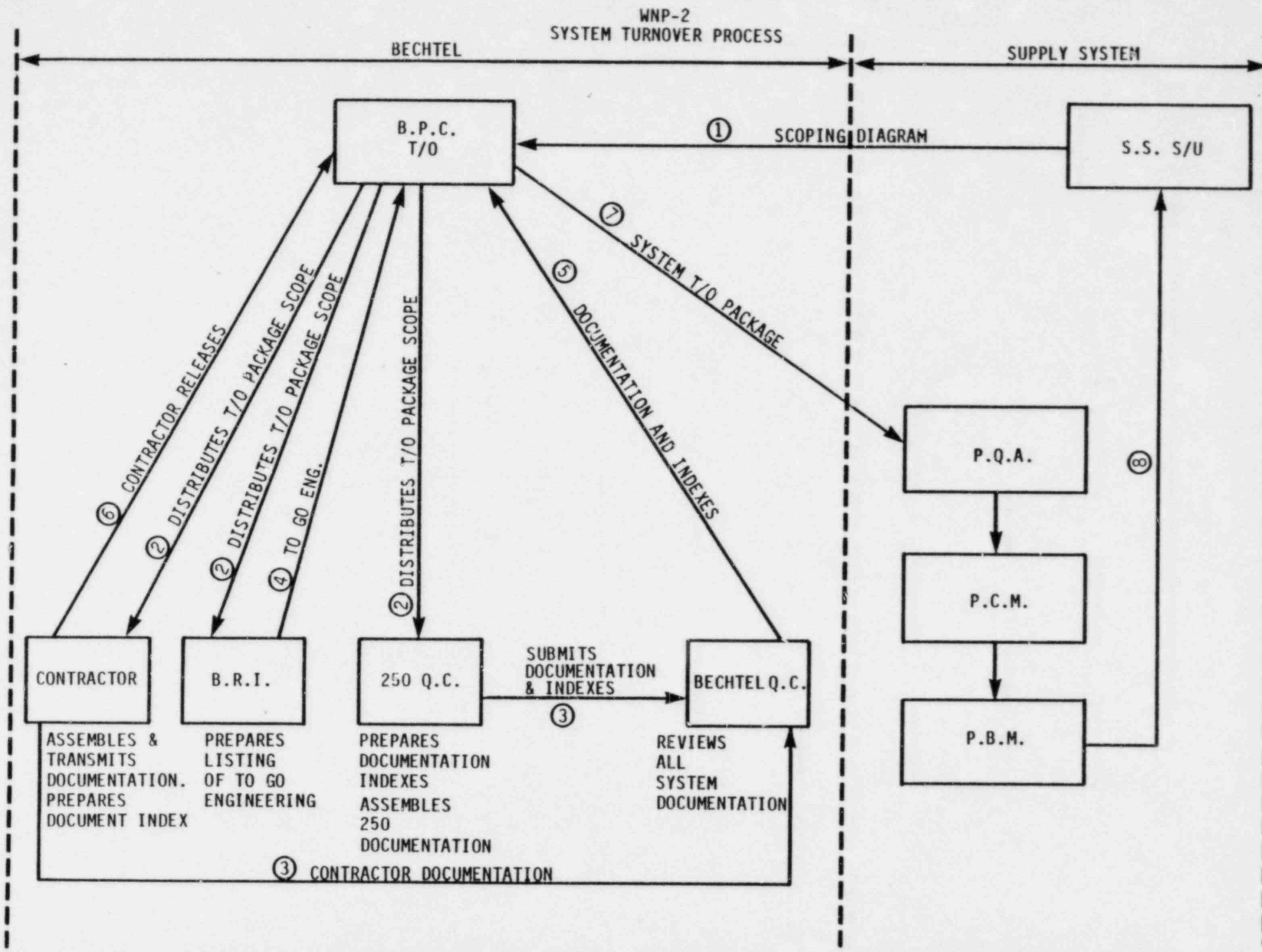
WNP-2 MASTER WORK LIST (MWL) ACTION SUMMARY

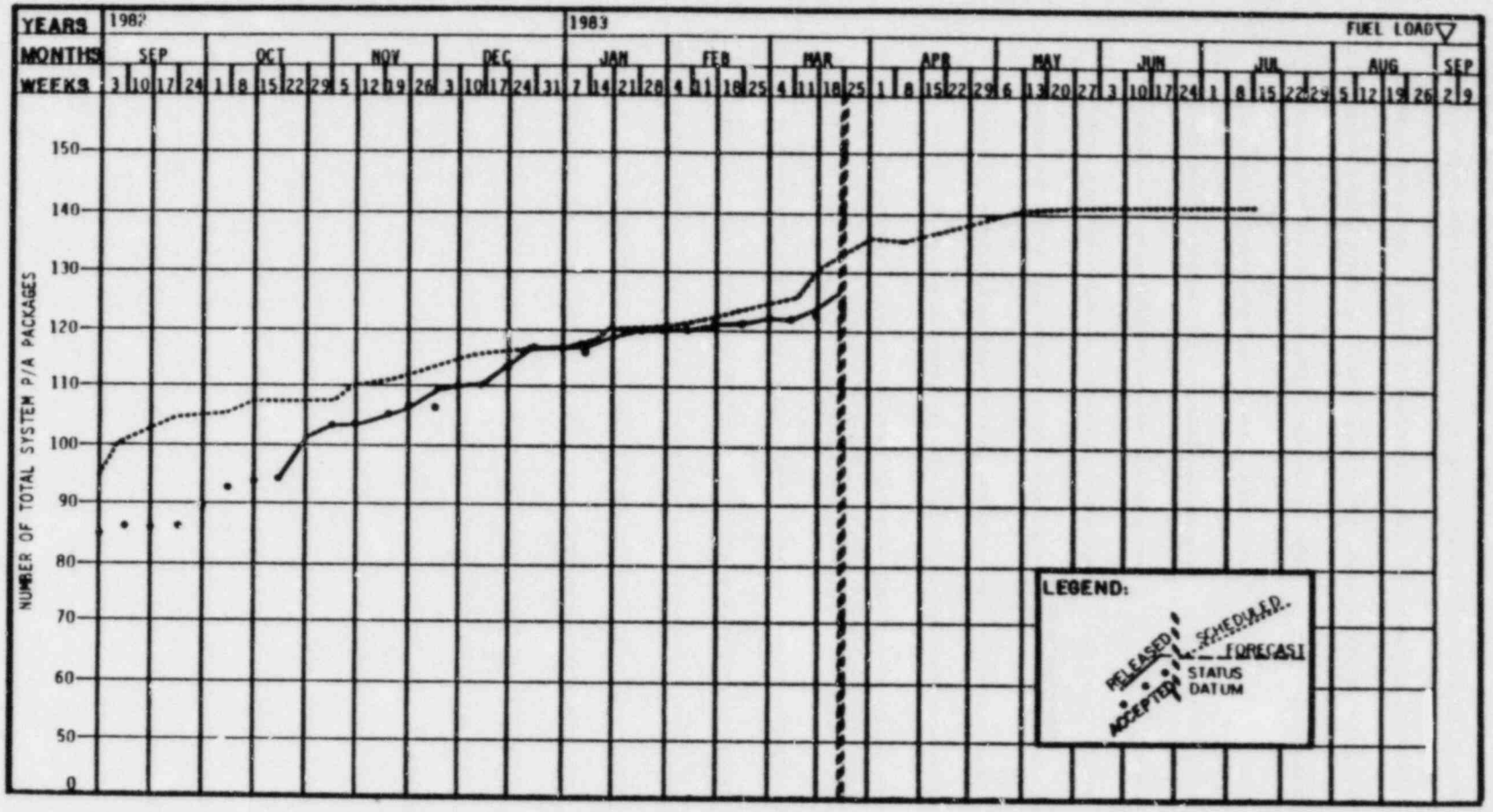


WNP-2 OPEN NCR'S

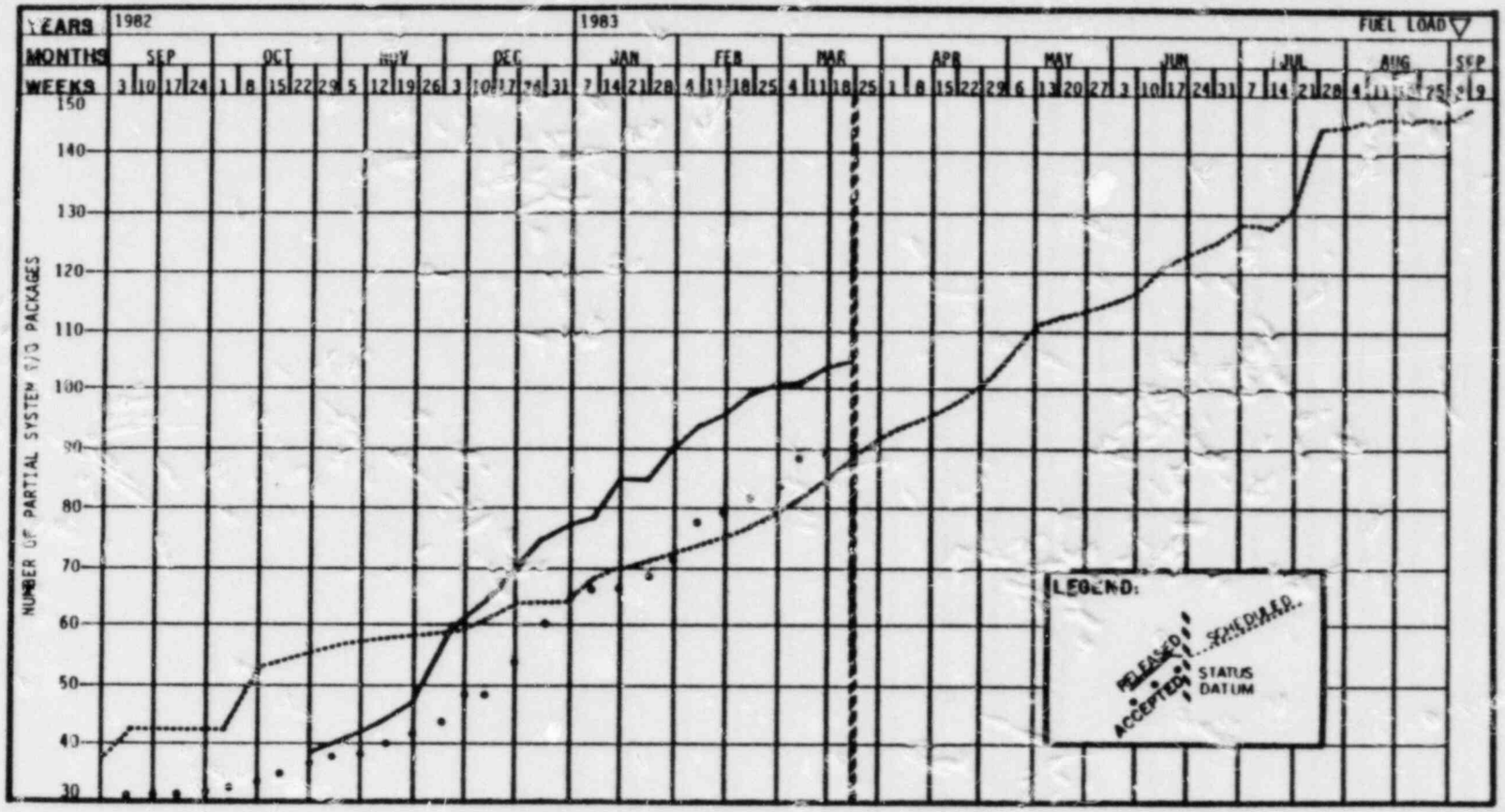



WNP-2
SYSTEM TURNOVER PROCESS
BECHTEL
SUPPLY SYSTEM
B.P.C.
T/O
① SCOPING DIAGRAM
S.S. S/U
⑦ SYSTEM T/O PACKAGE
⑤ DOCUMENTATION AND INDEXES
⑥ CONTRACTOR RELEASES
② DISTRIBUTES T/O PACKAGE SCOPE
② DISTRIBUTES T/O PACKAGE SCOPE
④ TO GO ENG.
② DISTRIBUTES T/O PACKAGE SCOPE
P.Q.A.
⑧
P.C.M.
P.B.M.
CONTRACTOR
B.R.I.
250 Q.C.
SUBMITS DOCUMENTATION & INDEXES
③
BECHTEL Q.C.
ASSEMBLES & TRANSMITS DOCUMENTATION. PREPARES DOCUMENT INDEX
PREPARES LISTING OF TO GO ENGINEERING
PREPARES DOCUMENTATION INDEXES
ASSEMBLES 250 DOCUMENTATION
REVIEWS ALL SYSTEM DOCUMENTATION
③ CONTRACTOR DOCUMENTATION

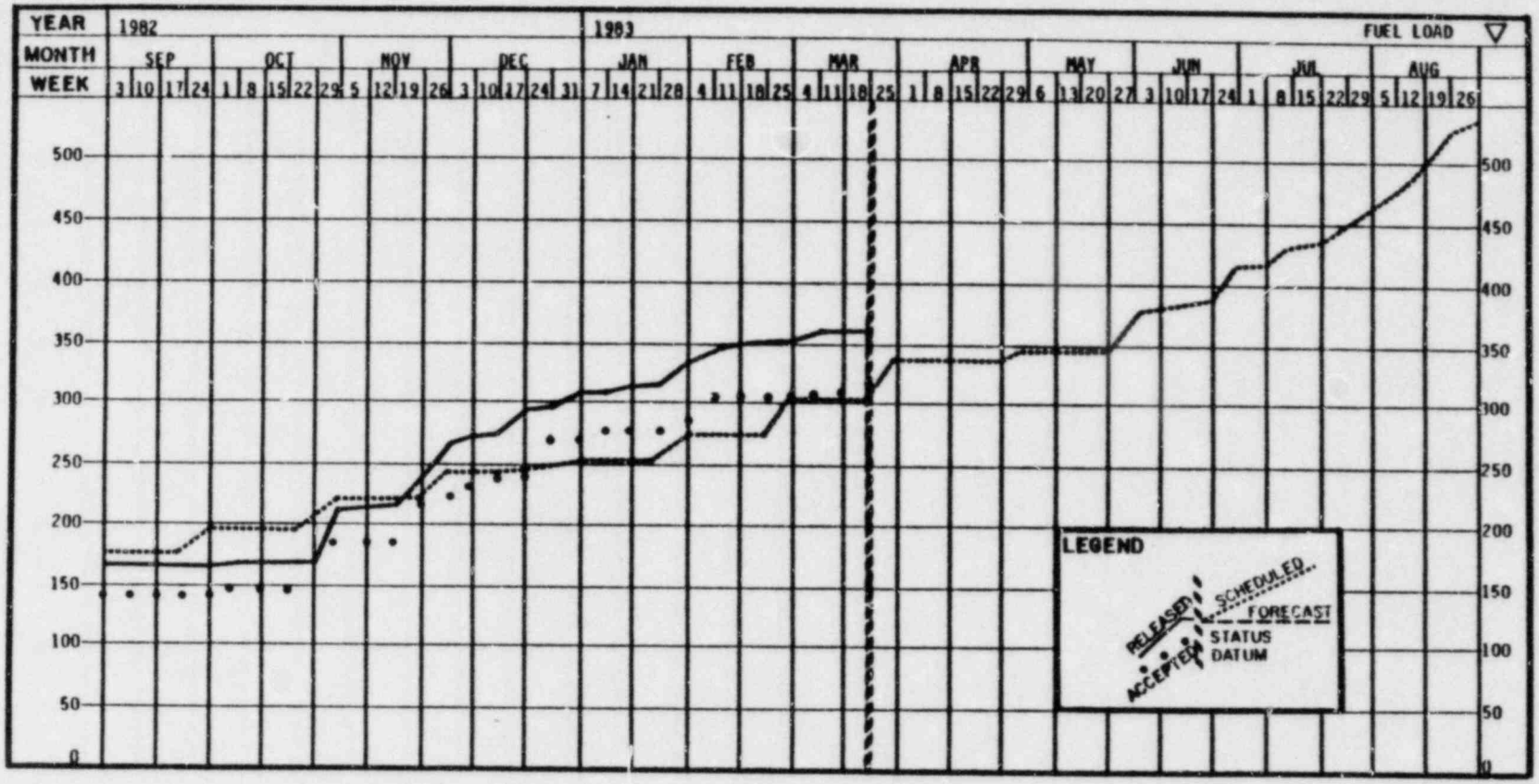
TOTAL SYSTEMS PACKAGE P/A CURVE



PARTIAL SYSTEMS T/O CURVE



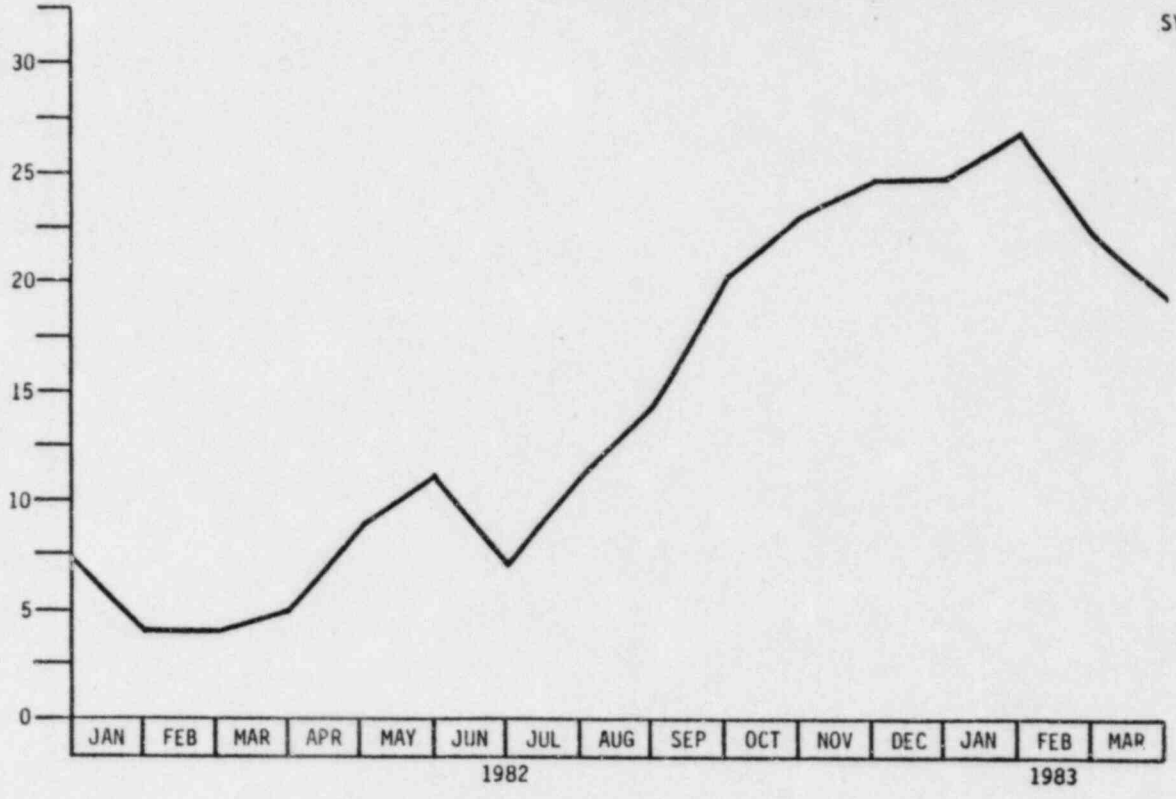
ROOM TURNOVER CURVE



COMPLETION STATUS

- 95.5 PER CENT COMPLETE.
- 59/101 COMPLETE SYSTEMS TURNED OVER.
- 86/101 COMPLETE SYSTEM PROVISIONALLY ACCEPTFD.
- 126/148 PARTIAL SYSTEMS PROVISIONALLY ACCEPTED.
- 313/531 AREAS TURNED OVER.
- PREOPERATIONAL/ACCEPTANCE TESTING IN PROGRESS.
- 9 10 SYSTEMS RELEASED TO OPERATIONS

10 CFR 50.55(e)'S
SYSTEM STATUS VARIABLES

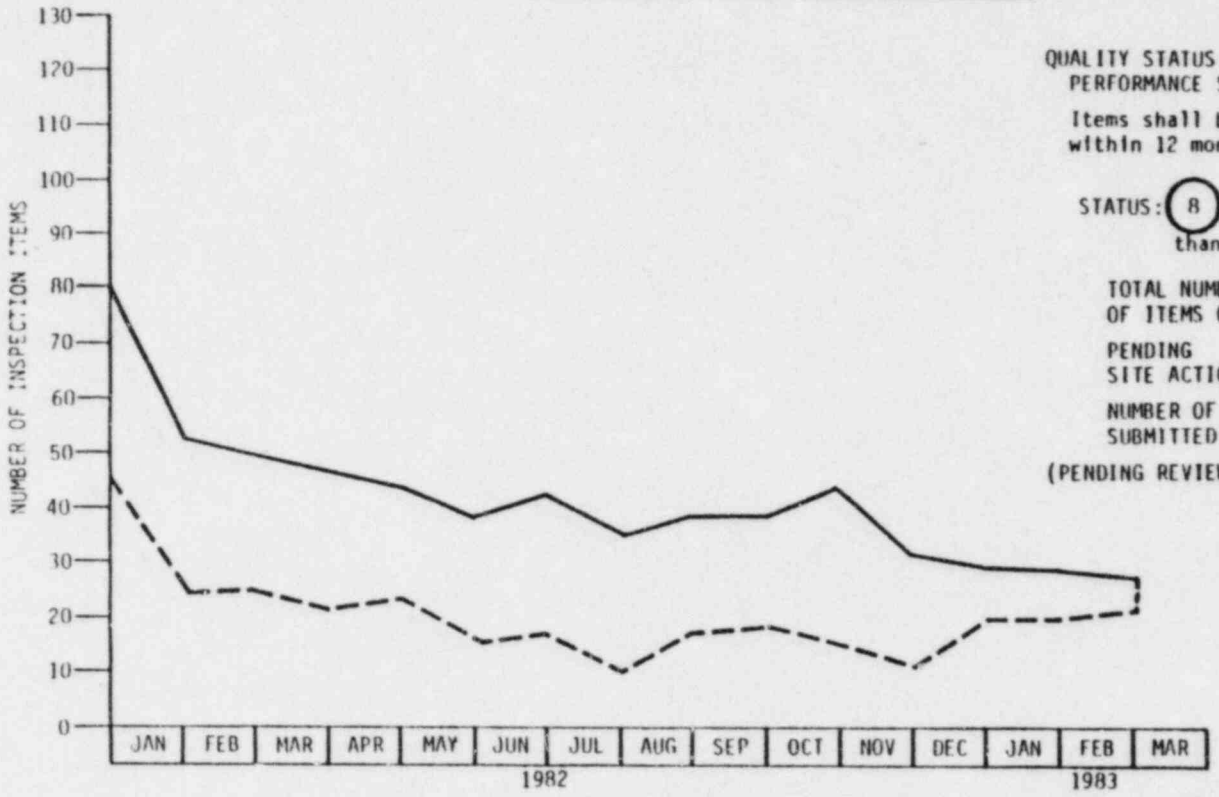


SYSTEM STATUS: MARCH 1, 1983	19
REPORT PERIOD BEGINNING TOTAL	24
CLOSED DURING REPORT PERIOD	9
ISSUED DURING REPORT PERIOD	5
TOTAL AT END OF REPORT PERIOD	19

AGE DATA

	>	9 MONTHS	= 6
> 6	AND	9 MONTHS	= 0
3		6 MONTHS	= 2
	<	3 MONTHS	= 11
		TOTAL	= 19

NRC INSPECTION SUMMARY



QUALITY STATUS:
PERFORMANCE STANDARD:

Items shall be closed out within 12 months of issuance.

STATUS: (8) items are older than 12 months.

TOTAL NUMBER OF ITEMS OPEN = 28

PENDING SITE ACTION = 6

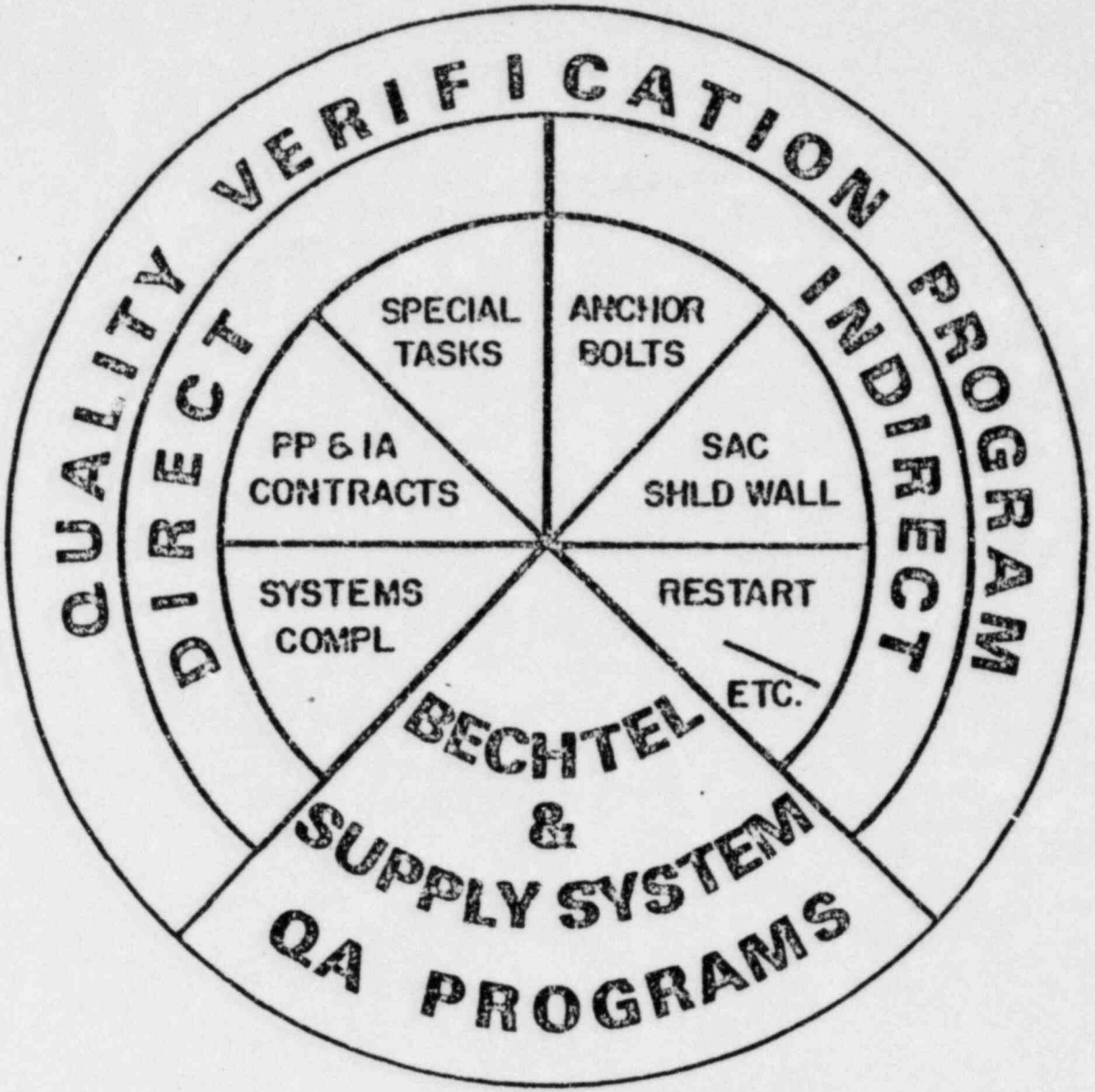
NUMBER OF ITEMS SUBMITTED TO NRC = 22

(PENDING REVIEW FOR CLOSURE)

LEGEND: —— Total Number of Items Open

– – Number of Items Submitted to NRC

*2 require site action
6 require NRC action


QUALITY VERIFICATION PROGRAM
DIRECT
INDIRECT
SPECIAL TASKS
ANCHOR BOLTS
PP & IA CONTRACTS
SAC SHLD WALL
SYSTEMS COMPL
RESTART
ETC.
BECHTEL & SUPPLY SYSTEM QA PROGRAMS

WNP-2 CONSTRUCTION VERIFICATION

QVP ELEMENTS

Systems Completion

- Piping and Hangers
- Structural Steel
- Equipment Installation
- Ductwork and Hangers
- Cable Installation and Terminations
- Conduit Supports
- I&C Installation

Prepurchase & Inactive Contracts

- Components and Valves
- Cable
- Structural Steel
- Concrete, Resteel and Cadwelds
- Cranes and Hoists
- Piping and Hangers
- Mechanical and Electrical Equipment
- Soil Compaction
- Instrumentation

Special Tasks

- Design Change Documentation
- Personnel Qualifications
- Receiving Inspections
- Grout

"OTHER" VERIFICATION ACTIVITIES

- Sacrificial Shield Wall Evaluation and Repair Program
- PWR Review and Repair Program
- WBG Documentation Completion Program
- Restart Program Elements
- Weld Radiograph Review
- Concrete Anchors Evaluation Program
- Backfill Testing Program
- Structural Steel Bolting
- Drywell Steel Inspection
- Special Inspections and Audits by Corporate or Project QA
- Hanger Retrofit Program
- Piping and Hanger As-Built Programs
- TSU's Component Verification Program
- Pre-Service Inspection
- Coating Rework

WBG DOCUMENTATION REVIEW

• PURCHASE ORDERS REVIEWED	14,000
• INSTALLATION PACKAGES REVIEWED	9,500
• NDE RECORDS REVIEWED	55,000
(ASME RADIOGRAPHS)	(2,690)
• EXCEPTIONS IDENTIFIED	4,825
• EXCEPTIONS VALIDATED	3,725
• MISSING DOCUMENTATION INCOMPLETE NDE	1,300
• RESOLVED BY CODE CASES AND OPTIONAL CODE PROVISIONS, ETC.	1,425
• NONCONFORMANCES WRITTEN	1,000

821760-4A

QUALITY VERIFICATION PROGRAM

REVIEWED DOCUMENTATION AND/OR HARDWARE FOR 70 CONTRACTS, INCLUDING:

- 125 PIPING ISO'S (~1600 WELDS)
- 650 PIPE HANGERS (~9000 WELDS)
- 100 STRUCTURAL STEEL ITEMS (~2000 WELDS)
- 400 CONDUIT HANGERS
- 100 DUCTWORK ITEMS AND 50 SUPPORTS
- 300 CABLE INSTALLATIONS (REPRES. 85,000 FT.)
- 1500 CONDUCTOR TERMINATIONS
- 60 INSTRUMENT RACKS & ASSOCIATED TUBING HANGERS
- MISCELLANEOUS EQUIPMENT ITEMS:
  - DIESEL-GENERATORS
  - ELECTRICAL EQUIPMENT INSTALLATION
  - CRANES
  - BRACKETS AND SUPPORTS
- THOUSANDS OF TECHNICAL CHANGE DOCUMENTS
  - 600 RE-REVIEWED FOR TECHNICAL ADEQUACY

RESULTED IN APPROXIMATELY 200 NCR'S.

QUALITY VERIFICATION PROGRAM

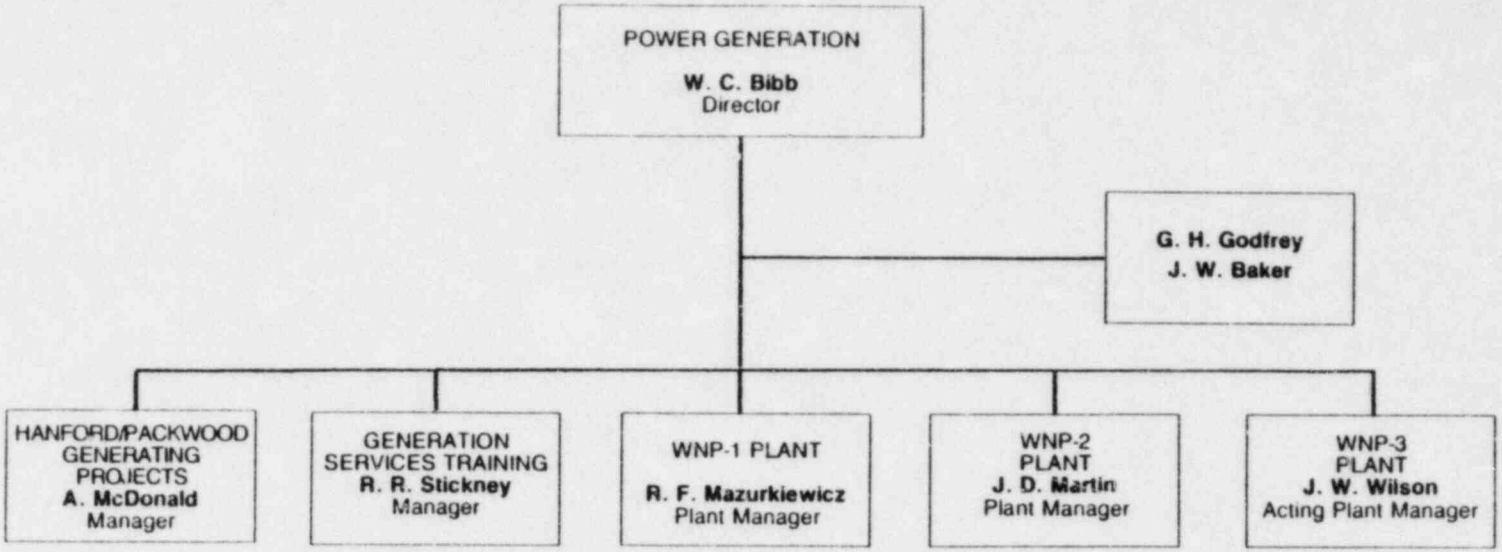
STATUS (3/83)

Program Activity	Percent of Program	Percent Complete	Percent of Program Complete	Scheduled Completion
Systems Completion Reviews & Inspections	55	99	54	5/83
Prepurchase & Inactive Reviews & Inspections	25	80	20	7/83
Special Tasks Reviews & Investigations	10	65	06	7/83
Task Completion & Program Reports	10	60	06	7/83
TOTAL PROGRAM	100	--	86	8/83

March 25, 1983

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

CHART 5.1
FEBRUARY 1983
REVISION 1



APPROVAL W.C. Bibb by HHK — DIRECTOR POWER GENERATION — DATE 2-14-83

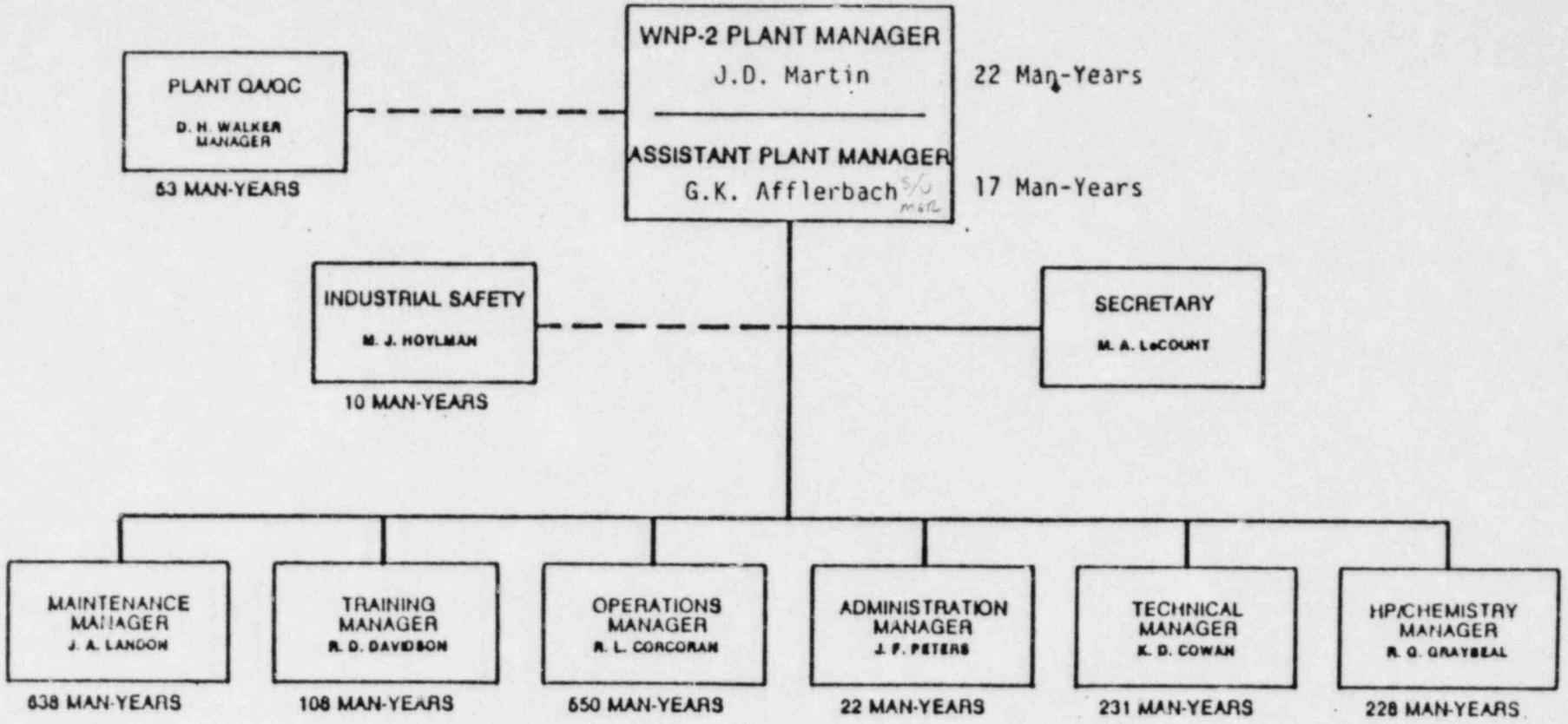
APPROVAL — DIRECTOR OPERATIONS — DATE 2/18/83

CONCURRENCE George E. Bailey — COMPENSATION & ORG PLANNING — DATE 2-15-83

830087

WNP-2 PLANT

NUCLEAR EXPERIENCE

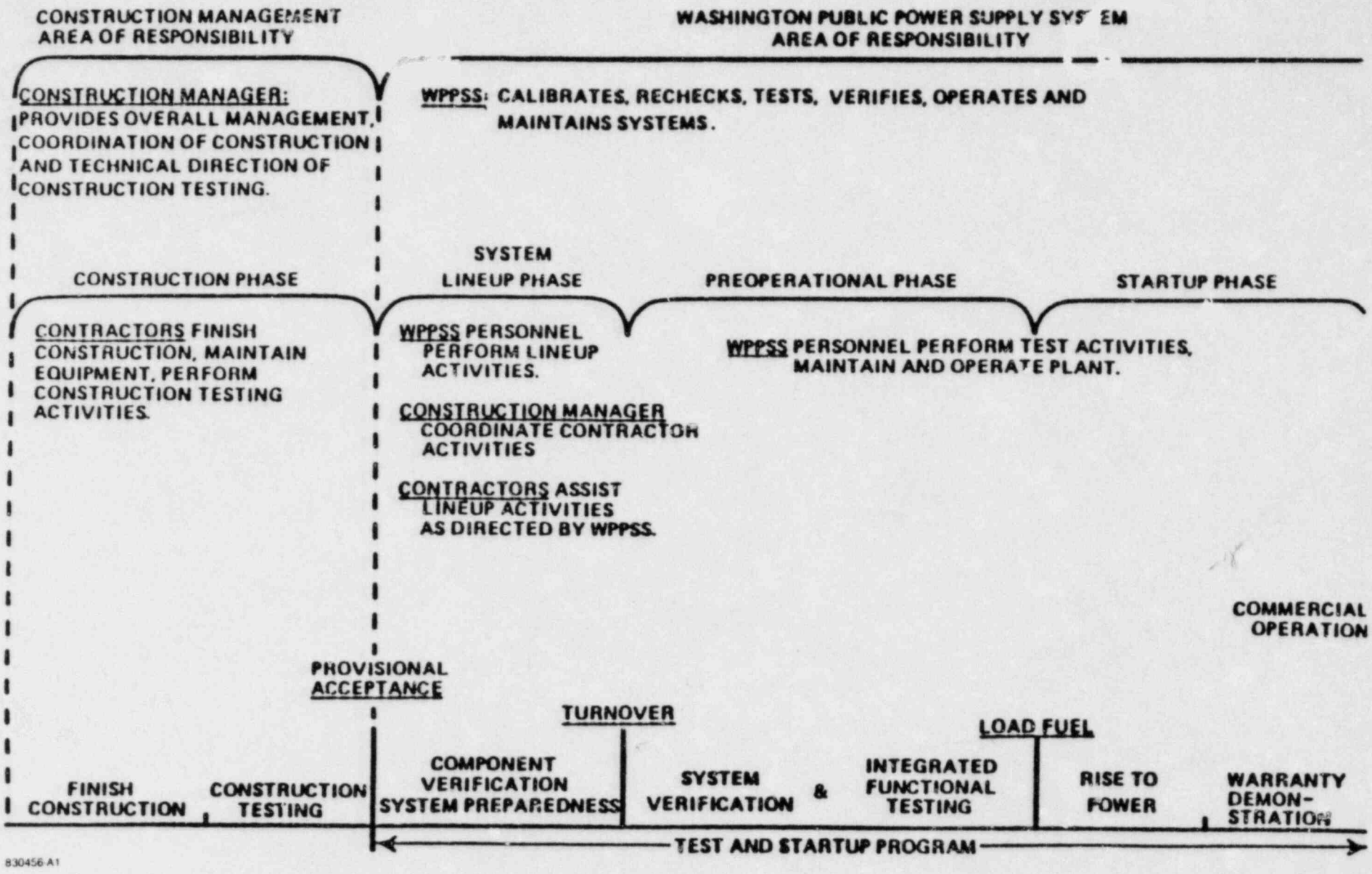


- GREATER THAN 1800 MANYEARS ONSITE NUCLEAR EXPERIENCE.

  OF WHICH

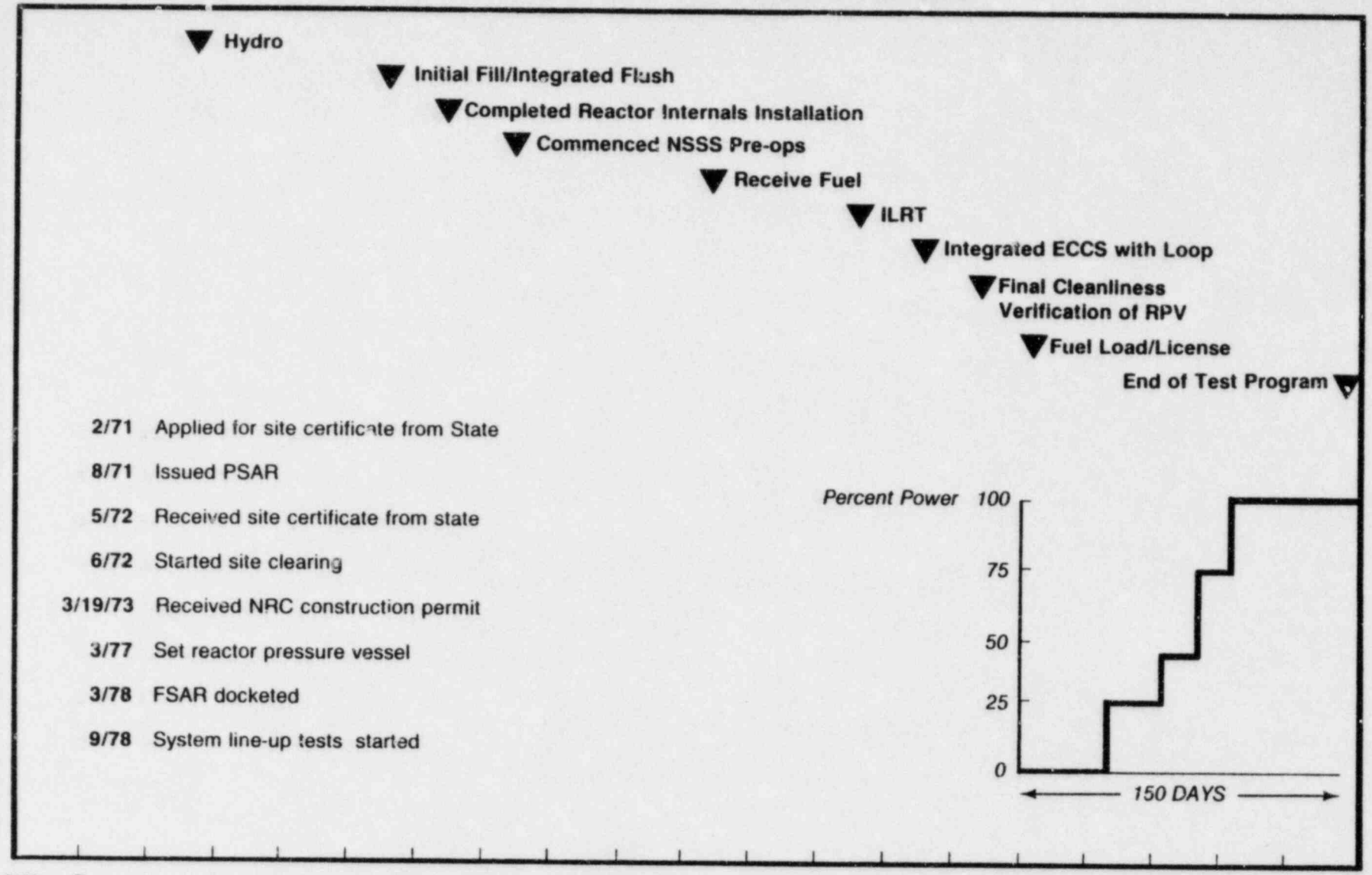
- GREATER THAN 600 MANYEARS ONSITE COMMERCIAL BWR EXPERIENCE.

TEST AND STARTUP PROGRAM
GENERAL OUTLINE



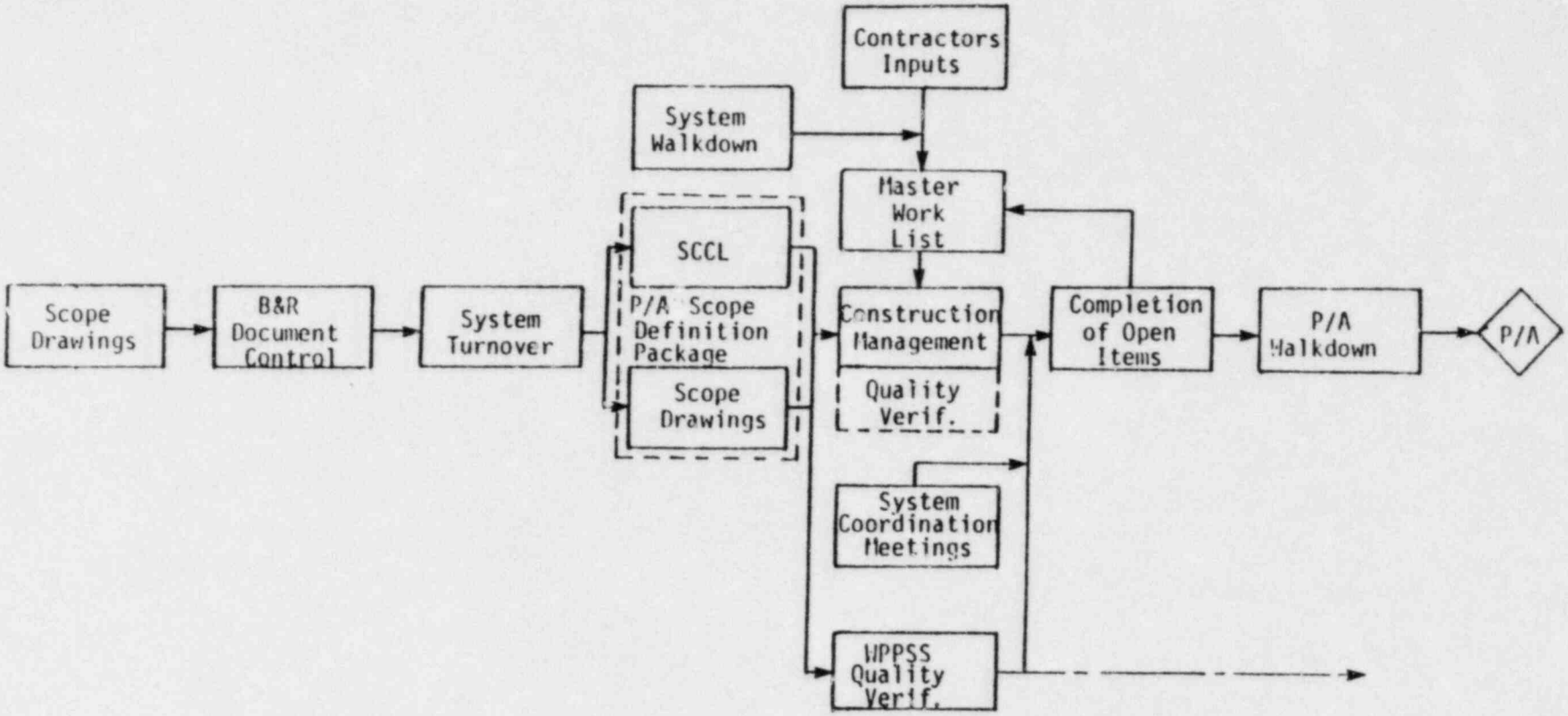
830456-A1

MAJOR START-UP MILESTONES



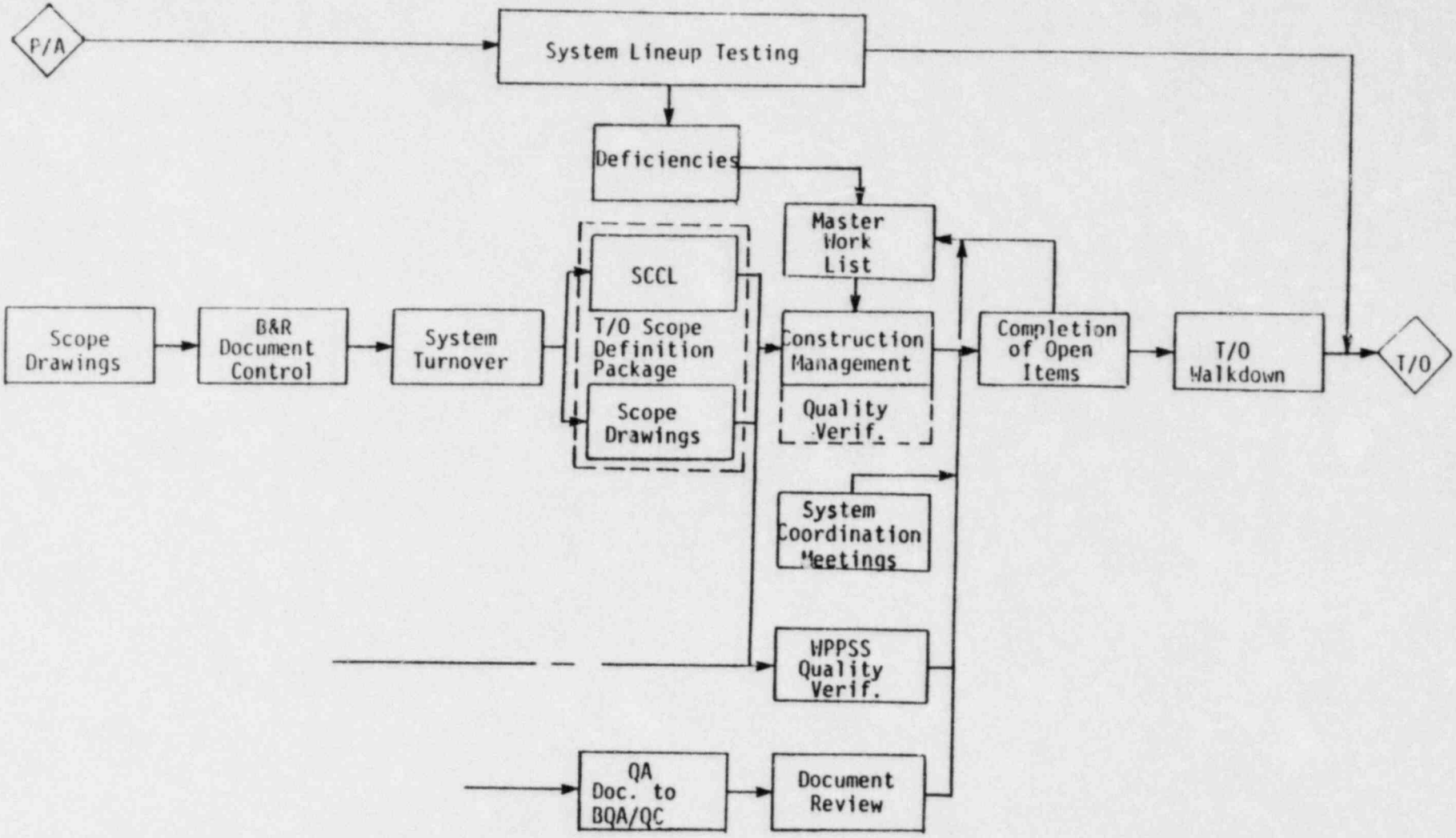
830158-2A

PROVISIONAL ACCEPTANCE FLOW CHART

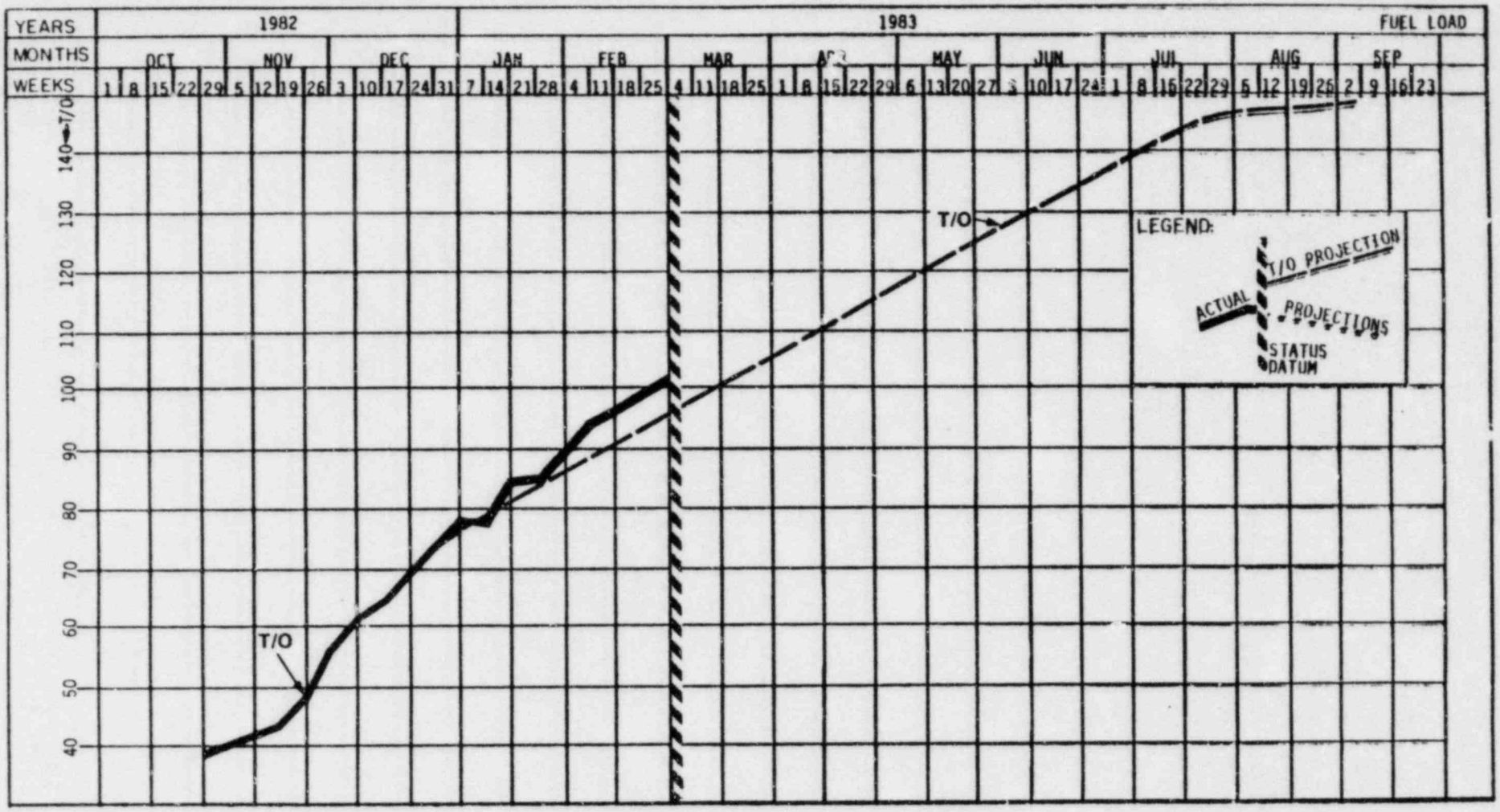


830456-A2

TURNOVER FLOW CHART

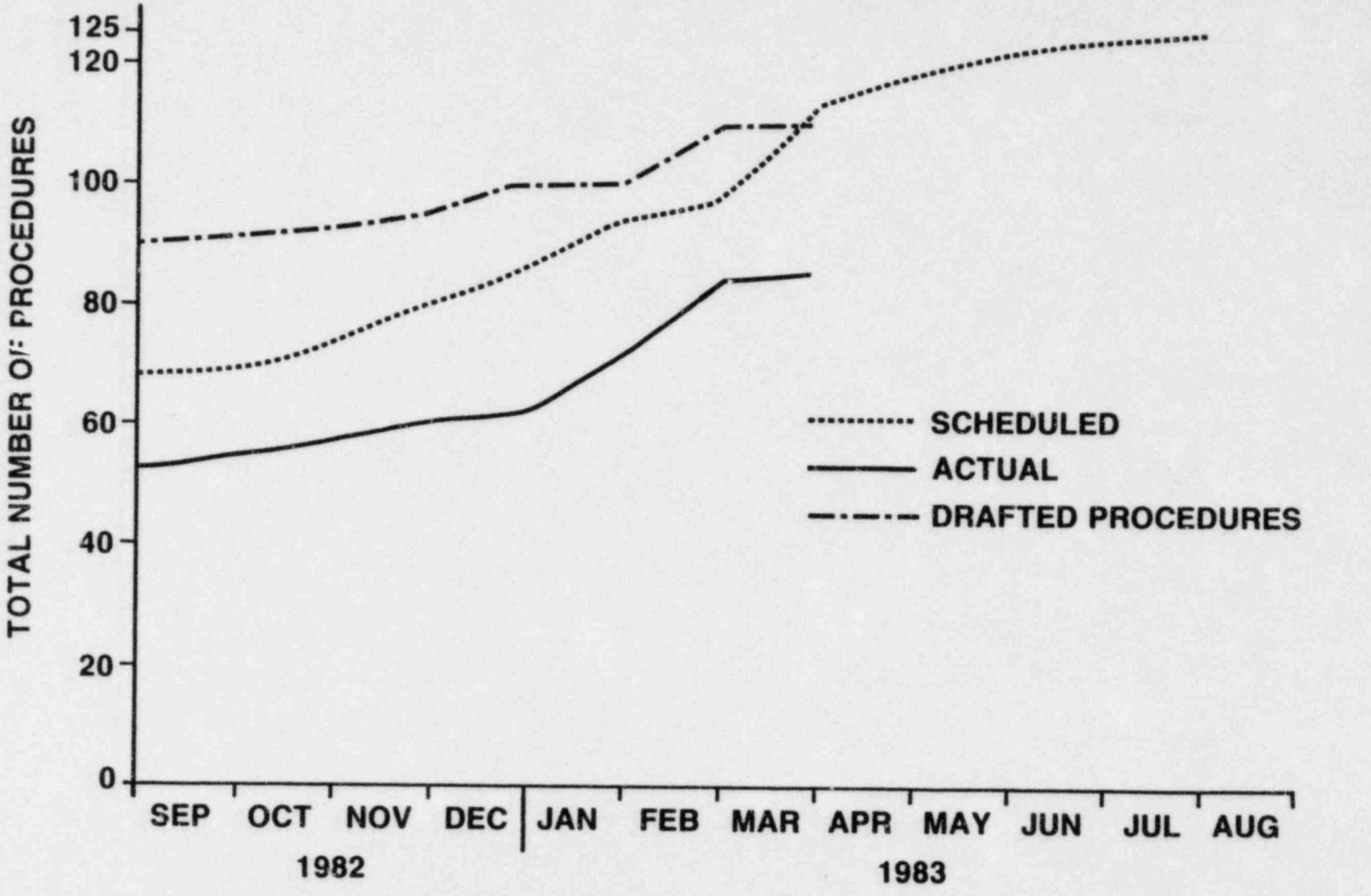


830456-A3


YEARS
1982
1983
FUEL LOAD
MONTHS
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
WEEKS
1 8 15 22 29 5 12 19 26 3 10 17 24 31 7 14 21 28 4 11 18 25 4 11 18 25 1 8 15 22 29 6 13 20 27 3 10 17 24 1 8 15 22 29 5 12 19 26 2 9 16 23
T/O
140
130
120
110
100
90
80
70
60
50
40
T/O
LEGEND:
T/O PROJECTION
ACTUAL
PROJECTIONS
STATUS
DATUM

830338-4A

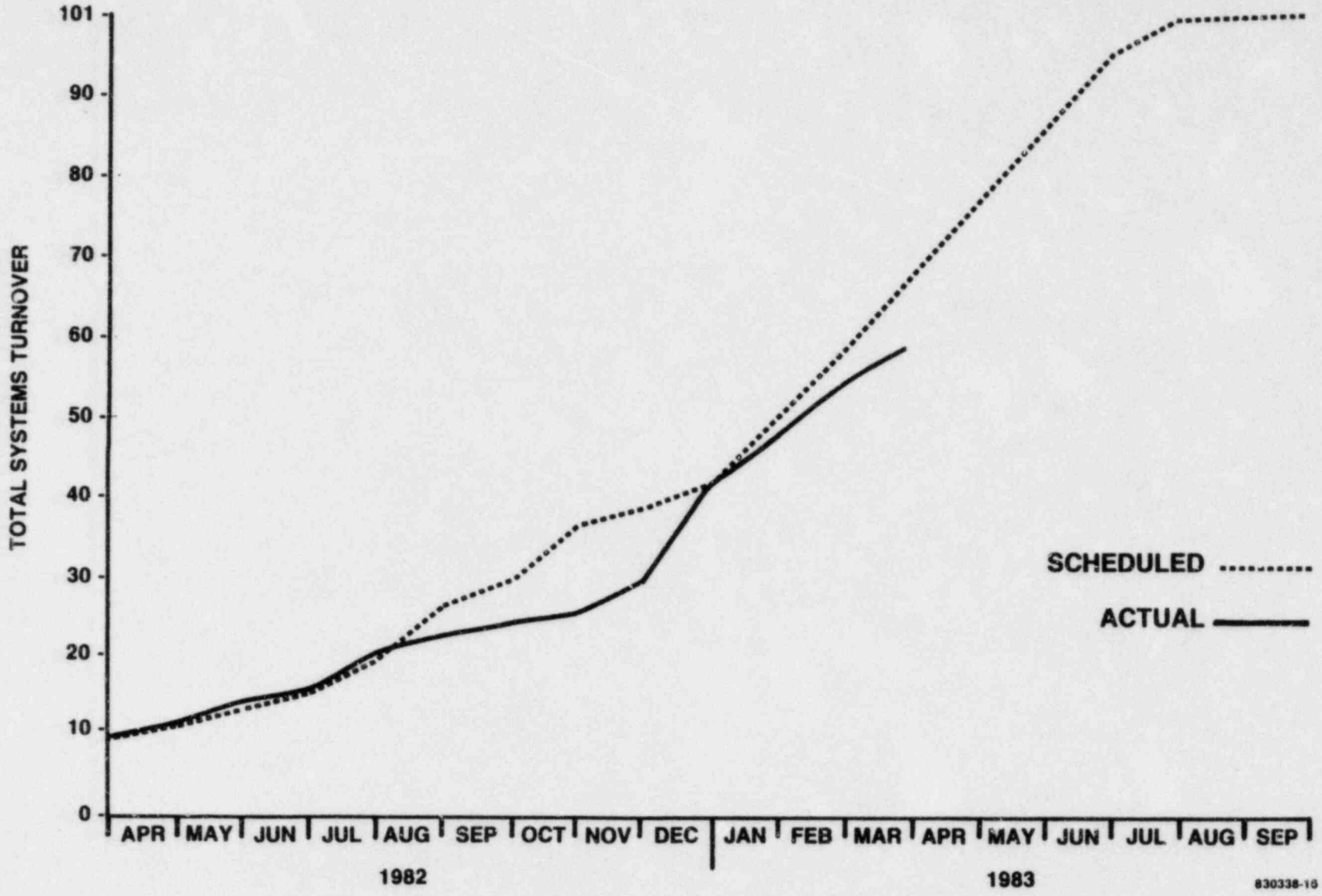
APPROVED PREOPERATIONAL/ACCEPTANCE TEST PROCEDURES



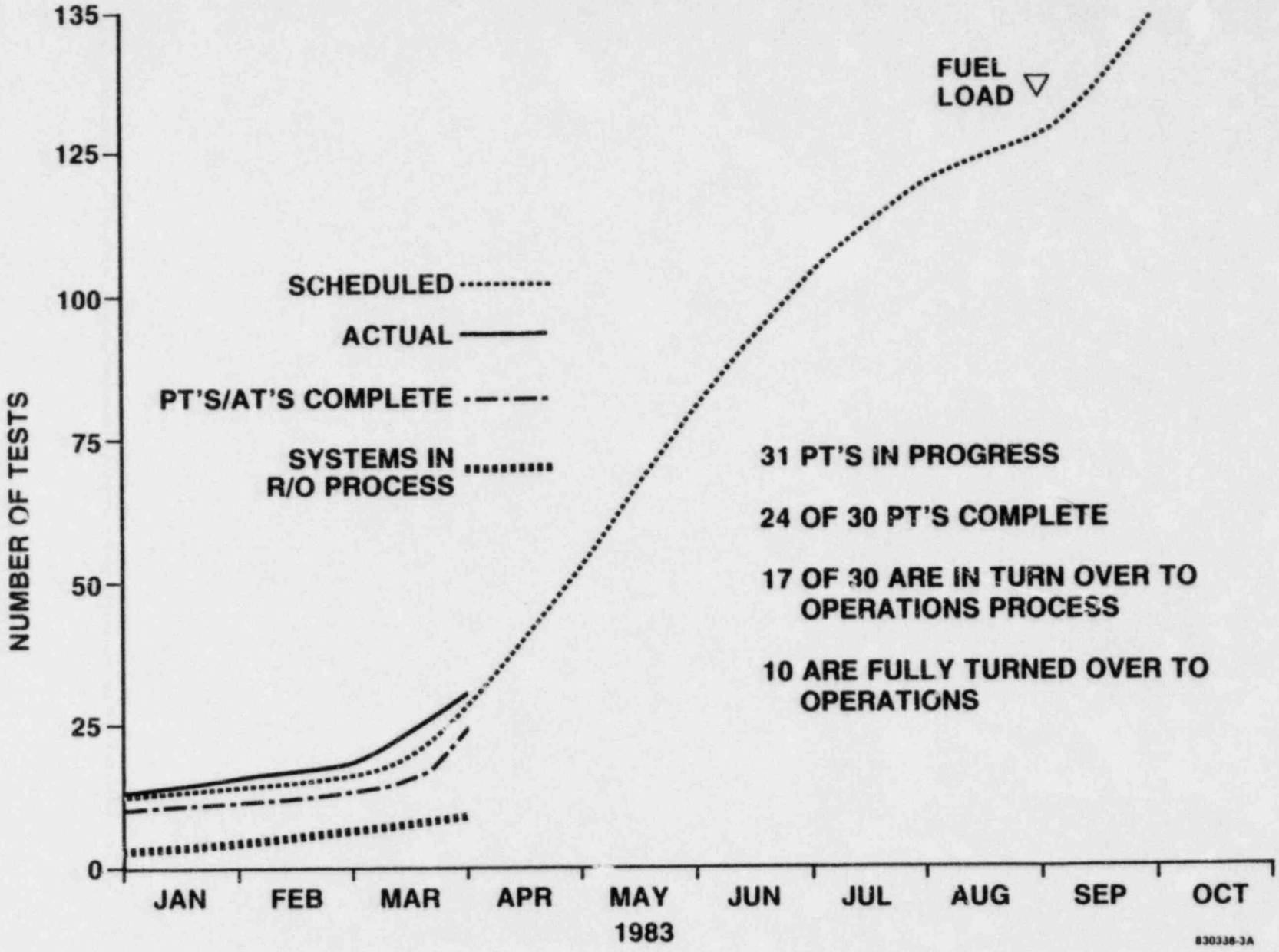
830338-20

SYSTEM TURNOVER SCHEDULE

DATA REFLECTS REV. 1 OF THE INTEGRATED PROJECT SCHEDULE



CUMULATIVE PREOP AND ACCEPTANCE TEST STARTS



WNP-2 DRILLS COMPLETED

- Fire
- Plant Contamination
- Environmental Sampling
- Personnel Rescue
- Chemistry Lab Operations
- Dose Assessment Operations (EOF)

STATUS

- 6 drills completed
- 500 persons started training program
- Emergency Program deficiencies status:
  - Procedures — submitted 3/1/83
  - Major Exercise — planned for 6/1/83
  - State/County Plans — county plan acceptable
    — state plan at 95%
- Emergency Plan revision due April

REMAINING WNP-2 DRILL SCHEDULE

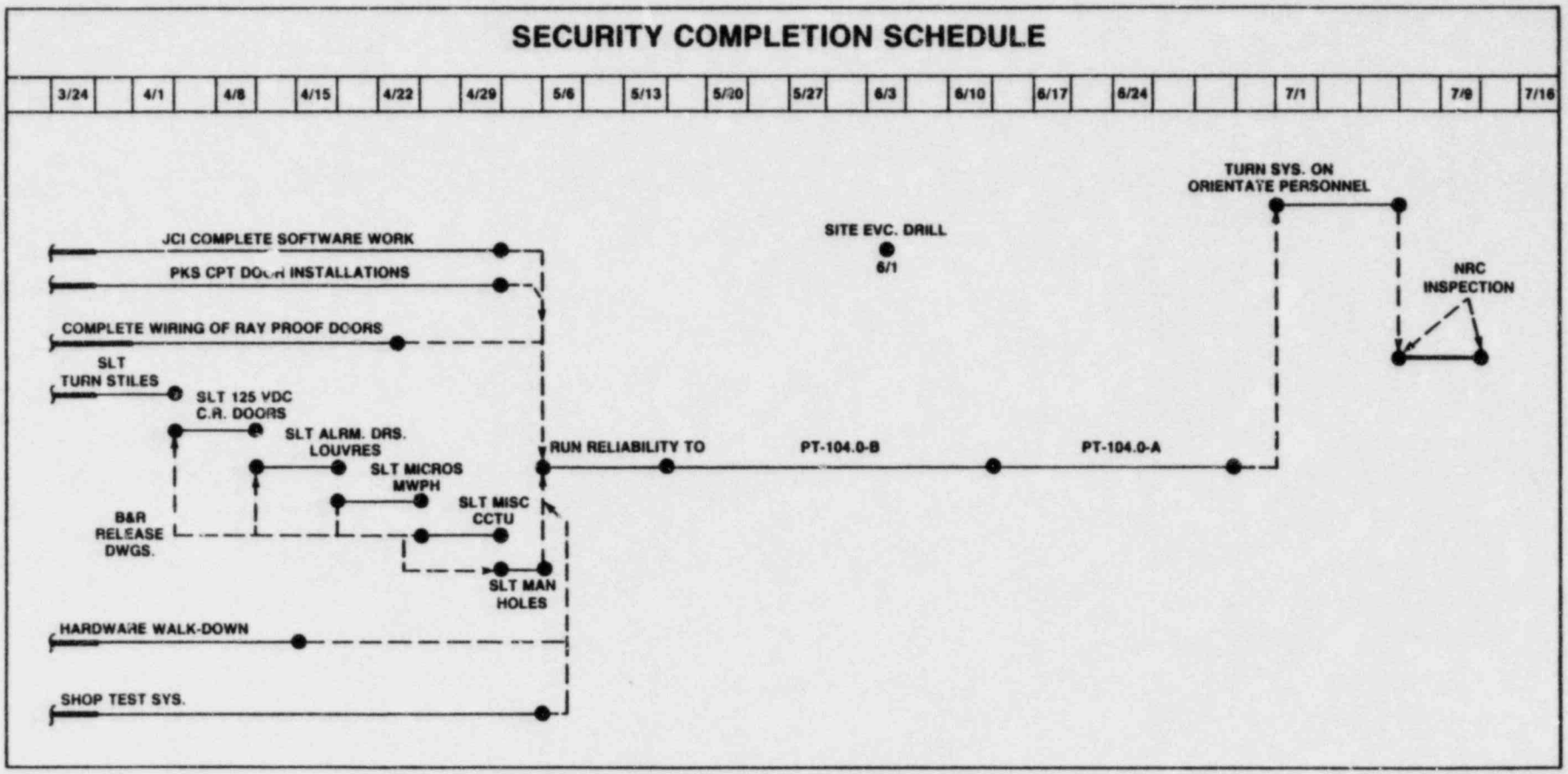
Drill	Title	Drill Date
83-8	Security	4/5/83
83-2	Medical	4/7/83
83-14/18/19	County Emergency Operations/ Environmental Field Operations/ Hanford Site Closure	4/19/83
83-15	Public Information Operations	4/28/83
83-9/10/20	Control Room/TSC/OSC	5/5/83
83-16/17	Emergency Center Coordination/ Public Protective Actions	5/12/83
	Major Exercise	6/1/83

830456-A7

WNP-2 SECURITY PROGRAM

- Designed to counter postulated threat of 10CFR 73.55
- Proprietary Security Force
  - Over 300 hours of training monitored by NRC and Washington State Criminal Justice Commission
  - Sidearms, rifles and shotguns provided
- Response assistance provided by:
  - Benton County Sheriff
  - DOE Hanford Patrol
  - Washington State Patrol
  - City of Richland Bomb Squad
- Security System includes effective mix of personnel, electronic security equipment and redundant systems
- Licensing documents approved:
  - WNP-2 Physical Security Plan — 11/6/81
  - Safeguards Contingency Plan — 11/6/81
  - Guard Training Plan — 11/6/81

SECURITY COMPLETION SCHEDULE



ENVIRONMENTAL MONITORING PROGRAMS FOR WNP-2

RADIOLOGICAL MONITORING

- CONTINUOUS SINCE 1978
- OPERATIONAL LEVEL REACHED SIX MONTHS PRIOR TO FUEL LOAD
- CURRENTLY SAMPLING AIR, WATER, FISH, SEDIMENT, SOIL, PRODUCE, AMBIENT GAMMA (TLDs), MILK

AQUATIC ECOLOGY

- BASED ON 5 1/2 YEARS BASELINE DATA (1974 - 80)
- RELIES ON BEST AVAILABLE INDICATORS
- CURRENTLY IN SHAKEDOWN -- OPERATIONAL BY FUEL LOAD
- WILL SAMPLE WATER QUALITY, FISH, ATTACHED ALGAE, AND AQUATIC INSECTS
- ADDITIONAL STUDIES ON INTAKE EFFECTS, AND THE EXTENT AND TOXICITY OF THE DISCHARGE PLUME

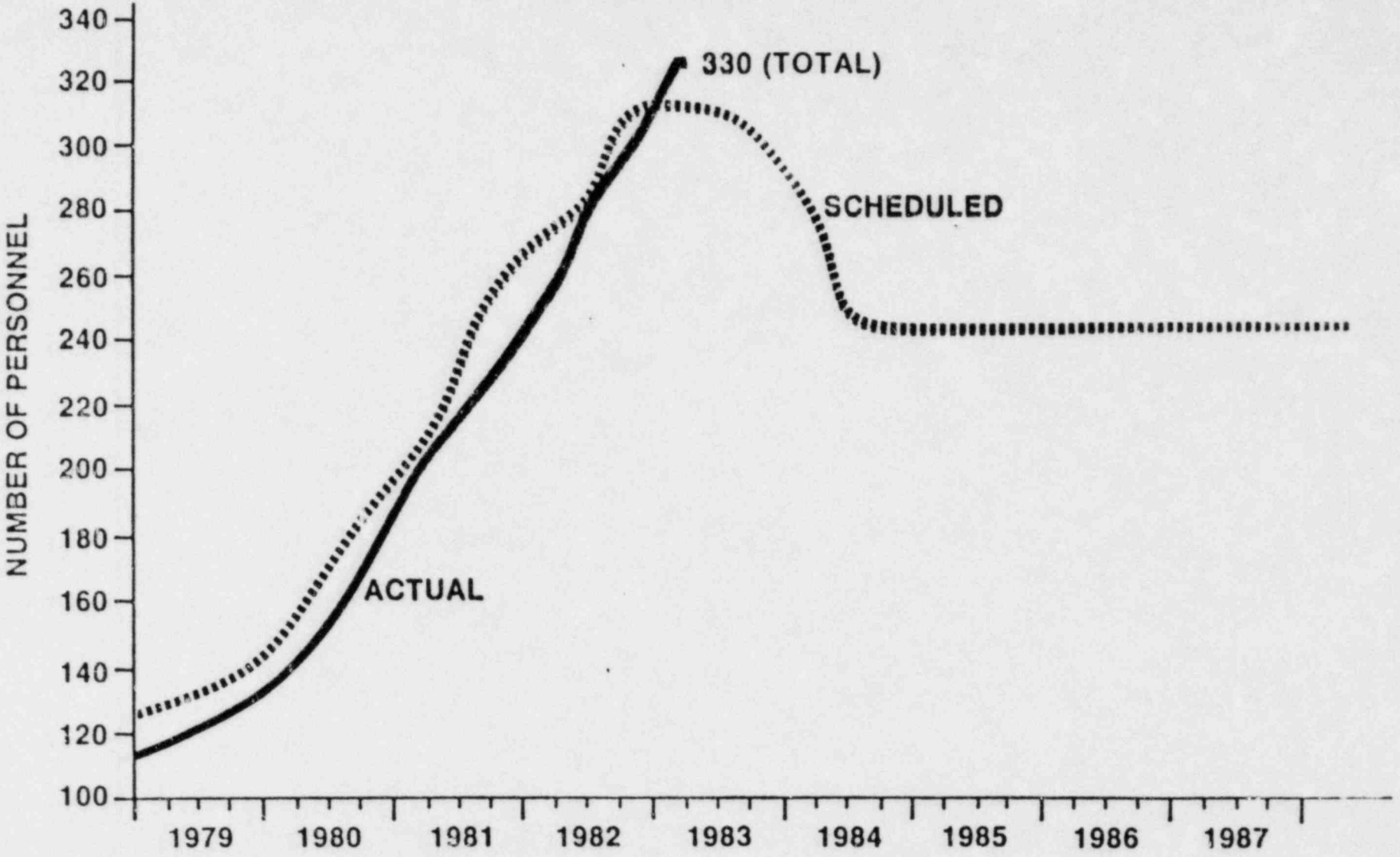
TERRESTRIAL ECOLOGY

- CONTINUOUS FOR APPROXIMATELY 10 YEARS
- CHEMICAL MEASUREMENTS ON PLANTS AND SOIL TO ASSESS BUILD-UP OF IONS FROM THE COOLING TOWER PLUME
- FIELD STUDIES ON THE DENSITIES OF PLANTS, BIRDS, DEER, AND RABBITS

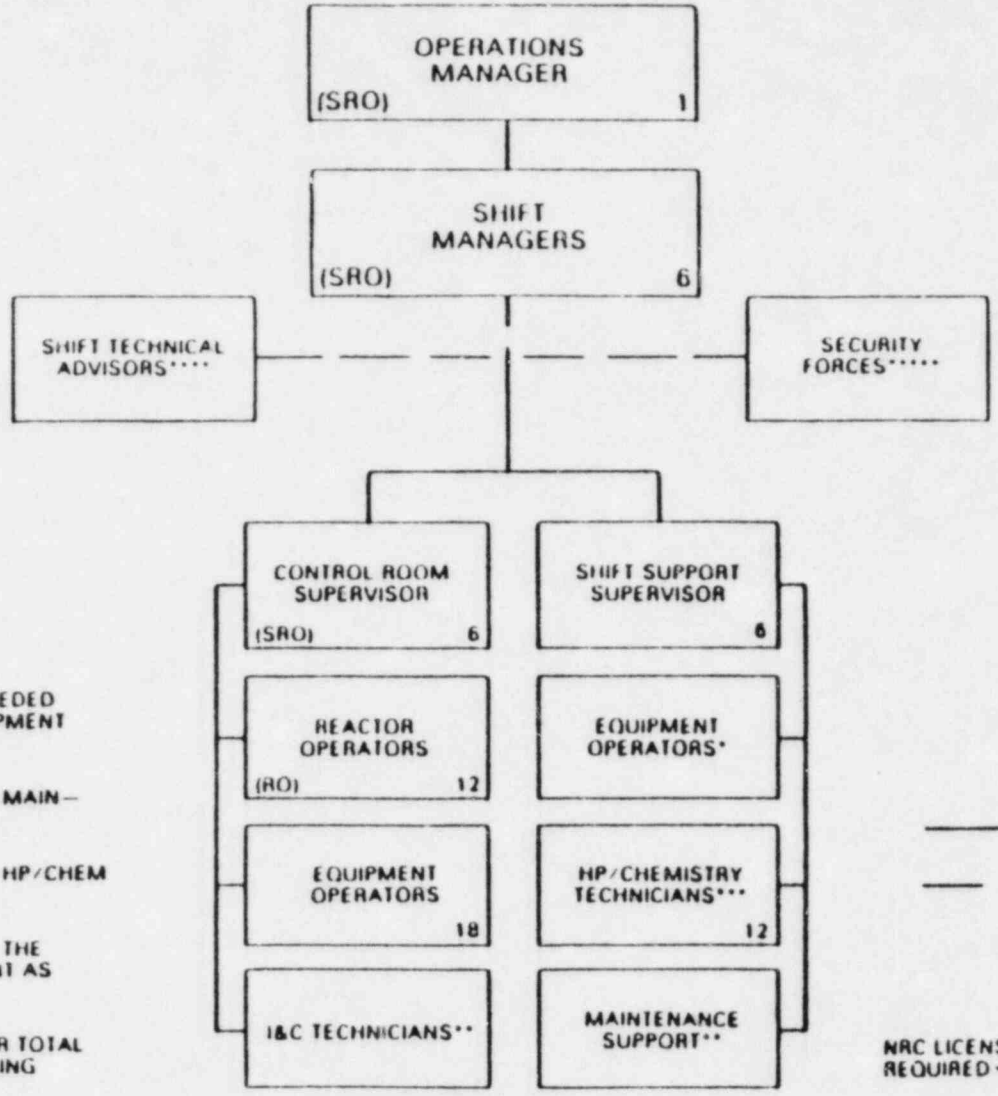
GENERAL

- ALL STUDIES BEING PERFORMED BY STAFF - MINOR USE OF CONSULTANTS

WNP-2 PLANT OPERATIONS STAFFING PLAN



WNP-2 OPERATIONS DEPARTMENT



* TO BE PROVIDED AS NEEDED FROM A POOL OF EQUIPMENT OPERATORS

** TO BE PROVIDED FROM MAINTENANCE DEPARTMENT

*** TO BE PROVIDED FROM HP/CHEM DEPARTMENT

**** TO BE PROVIDED FROM THE TECHNICAL DEPARTMENT AS REQUIRED

***** SEE SECURITY PLAN FOR TOTAL SECURITY FORCE STAFFING LEVEL

LEGEND

FUNCTIONAL REPORTING

LINE OF COMMUNICATION

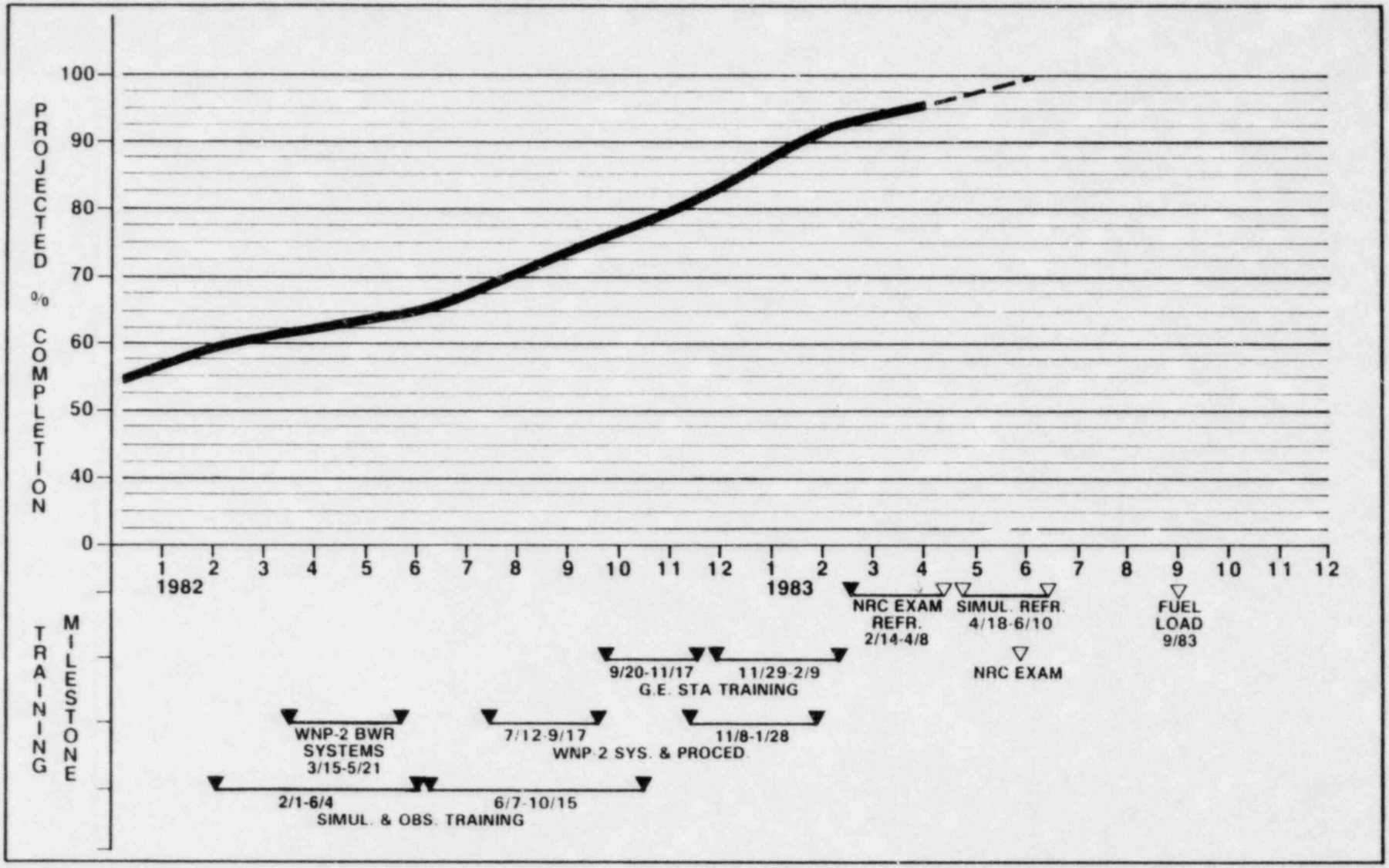
POSITION

NRC LICENSE REQUIRED → SRO 1

NUMBER OF PERSONNEL IN POSITION

830456-A8

LICENSE TRAINING PROGRESS FOR 43 OPERATIONS DEPARTMENT PERSONNEL



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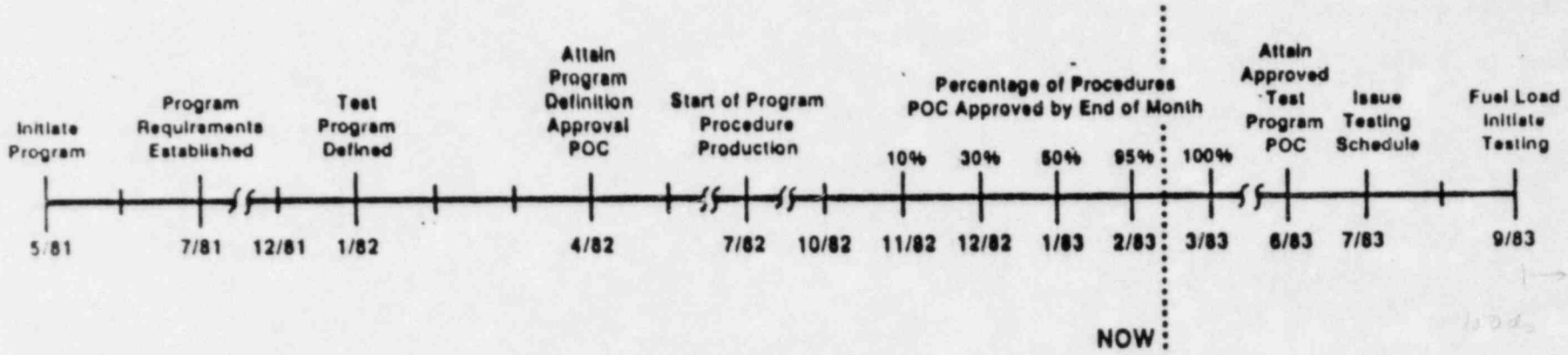
WNP-2 POWER ASCENSION TEST PROGRAM

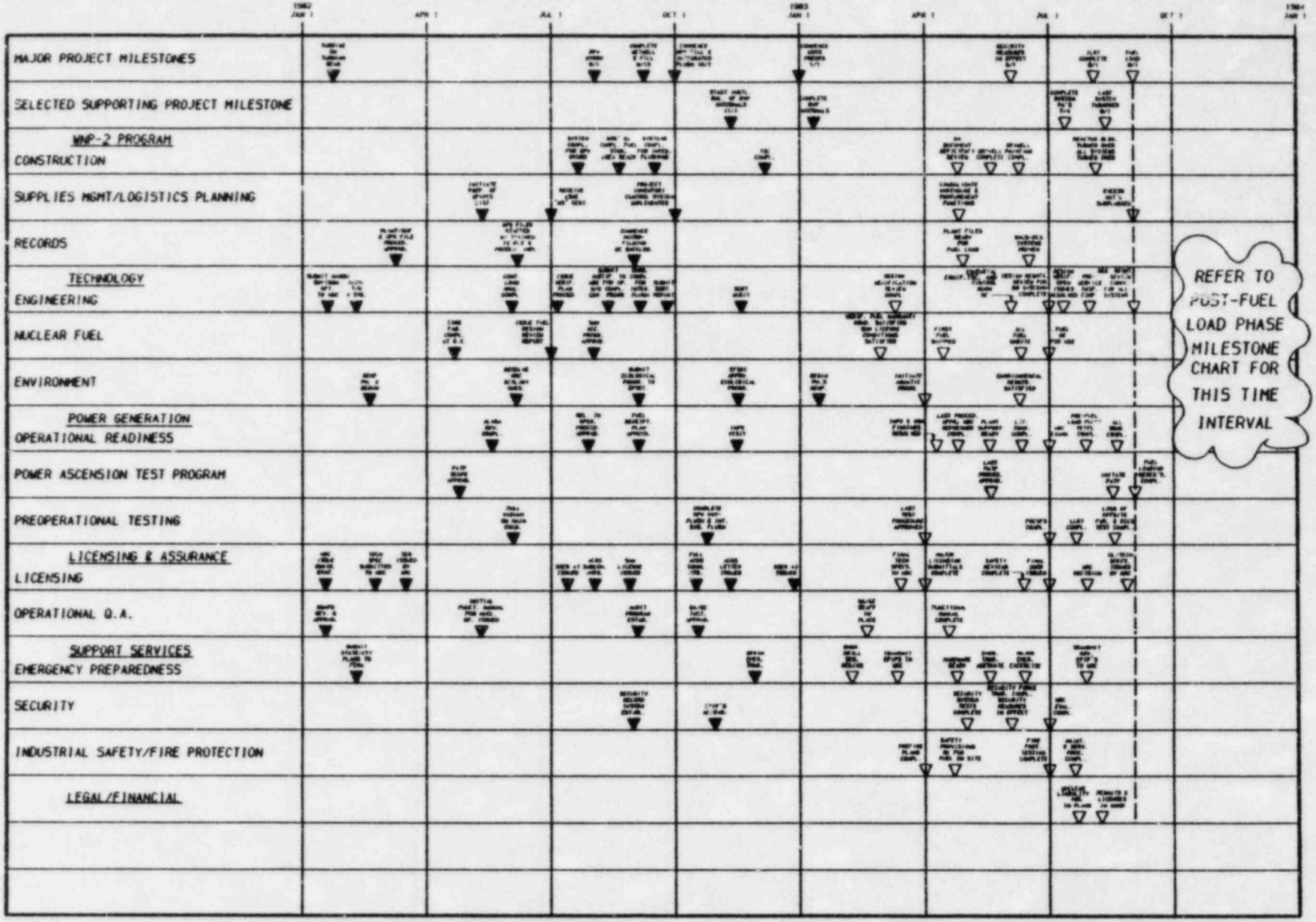


SUPPLY SYSTEM PREREQUISITES FOR WNP-2 FUEL LOADING — REGULATORY/LICENSING

ITEM NO.	ITEM FROM	DESCRIPTION	RESPONSIBILITY FOR PERFORMANCE	RESPONSIBILITY FOR SIGN-OFF	SIGNATURES
RL-1	10CFR50.30	The Operating License application for WNP-2 has been filed in final form with NRC in accordance with the requirements of 10CFR50.30.	Nelson	Sorensen-r	
RL-2		Deleted by Revision 2.			
RL-3	10CFR50.30 and 10CFR51.21	The WNP-2 Environmental Report - Operating License stage has been submitted to NRC.	Wise	Sorensen-p Wise	
	10CFR51.22	1. Draft Environmental Statement - OL stage has been issued.	Wise	Sorensen-p Wise	
	10CFR51.26	2. Final Environmental Statement - OL stage has been issued.	Wise	Sorensen-p Wise	
RL-4	10CFR50.34	The WNP-2 Final Safety Analysis Report is up to date as necessary for fuel loading and has been accepted by NRC. Open items, commitments and issues as delineated on the WNP-2 Licensing Commitments Log have been resolved.	Nelson	Sorensen-p Bouchey	
RL-5	10CFR2.102	The WNP-2 Safety Evaluation Report (SER) has been issued by NRC.	Nelson	Sorensen-p	
RL-6	10CFR50.58	Advisory Committee on Reactor Safeguards (ACRS) review of WNP-2 application is complete and the ACRS recommendation letter has been issued. Refer to letter Shewman to Pallidino GI2-82-131 dated 10/13/82 for supporting information.	Nelson	Sorensen-p	

PRE-FUEL LOAD PHASE MILESTONES
WNP-2 COMPLETION PLAN

DATE: FEBRUARY 1, 1983
REV. 3



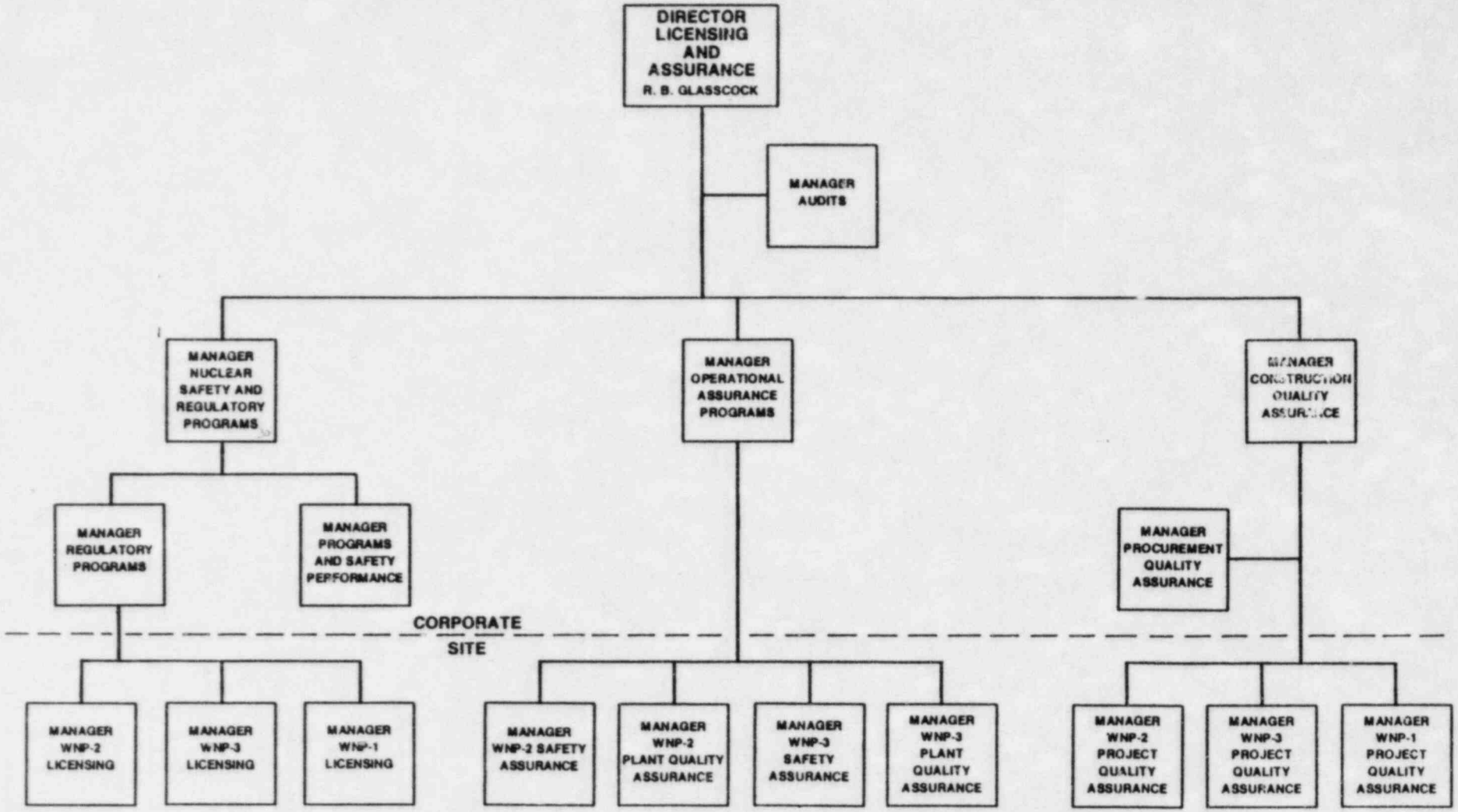
LICENSING AND ASSURANCE FUNCTIONS

LICENSING

- PROVIDE CONTROL OF LICENSING COMMITMENTS BY
  - LOG ALL COMMITMENTS FROM NRC CORRESPONDENCE
  - MAINTAIN AWARENESS OF NEW REQUIREMENTS
- TRACK IMPLEMENTATION OF COMMITMENTS BY
  - PERIODIC UPDATE OF COMMITMENT LOG
  - FREQUENT CONTACT WITH TECHNICAL GROUPS REGARDING SCHEDULE OF ACTIVITY
  - INDEPENDENT CONFIRMATION
- ENSURE REVIEW OF NRC SUBMITTALS FOR ACCURACY BY
  - INVOLVEMENT OF RESPONSIBLE TECHNICAL ORGANIZATIONS
  - OTHER ORGANIZATIONS AS APPROPRIATE

ASSURANCE

- ESTABLISH IN CONJUNCTION WITH OTHER ORGANIZATIONS, THE SAFETY AND QUALITY ASSURANCE POLICY TO COMPLY WITH THE REGULATIONS.
- ASSURE METHODS AND CONTROLS ARE ESTABLISHED AND IMPLEMENTED TO COMPLY WITH THE POLICY AND COMMITTED REQUIREMENTS BY
  - REVIEWS
  - SURVEILLANCES
  - INSPECTIONS
  - AUDITS
- ESTABLISHED PRIMARILY AS A PROGRAM TO PREVENT PROBLEMS BY
  - REVIEWS TO DETERMINE THAT METHODS FOR PERFORMING WORK ARE ESTABLISHED THAT INCLUDE THE CORRECT CONCEPT FOR GOOD CONTROL.
  - SUFFICIENT REAL TIME VERIFICATION TO ASSURE THE METHODS ARE IMPLEMENTED.
  - IN ADDITION THERE IS A PLANNED AUDIT ACTIVITY TO REVIEW OVERALL IMPLEMENTATION OF THE PROGRAMS.
  - ASSESSMENT FOR TRENDS.
- CORPORATE NUCLEAR SAFETY REVIEW BOARD TO REVIEW SPECIFIC ADVERSE TRENDS AND OTHER POTENTIAL SAFETY ISSUES.
- THE APPROACH TO THE PROGRAM IS THAT LINE MANAGEMENT HAS THE RESPONSIBILITY TO PLAN AND PERFORM THE WORK AND THE ASSURANCE ORGANIZATIONS PERFORM SUFFICIENT REVIEW AND VERIFICATION TO ASSURE THIS IS DONE.


DIRECTOR LICENSING AND ASSURANCE
R. B. GLASSCOCK
MANAGER AUDITS
MANAGER NUCLEAR SAFETY AND REGULATORY PROGRAMS
MANAGER OPERATIONAL ASSURANCE PROGRAMS
MANAGER CONSTRUCTION QUALITY ASSURANCE
MANAGER REGULATORY PROGRAMS
MANAGER PROGRAMS AND SAFETY PERFORMANCE
MANAGER PROCUREMENT QUALITY ASSURANCE
CORPORATE
SITE
MANAGER WNP-2 LICENSING
MANAGER WNP-3 LICENSING
MANAGER WNP-1 LICENSING
MANAGER WNP-2 SAFETY ASSURANCE
MANAGER WNP-2 PLANT QUALITY ASSURANCE
MANAGER WNP-3 SAFETY ASSURANCE
MANAGER WNP-3 PLANT QUALITY ASSURANCE
MANAGER WNP-2 PROJECT QUALITY ASSURANCE
MANAGER WNP-3 PROJECT QUALITY ASSURANCE
MANAGER WNP-1 PROJECT QUALITY ASSURANCE

LICENSING AND ASSURANCE ORGANIZATIONAL FUNCTIONS

NUCLEAR SAFETY AND REGULATORY PROGRAMS

- STATE AND FEDERAL LICENSING/NRC INTERFACE
- CORPORATE NUCLEAR SAFETY REVIEW BOARD SUPPORT
- TREND ASSESSMENT
- SAFETY AND QA PROGRAM DEVELOPMENT
- INDEPENDENT SAFETY REVIEWS

CONSTRUCTION QUALITY ASSURANCE

- DESIGN AND CONSTRUCTION QUALITY ASSURANCE
- PROCUREMENT QUALITY ASSURANCE

OPERATIONAL ASSURANCE PROGRAMS

- ONSITE INDEPENDENT SAFETY ENGINEERING GROUPS (SAFETY ASSURANCE)
- OPERATIONAL QUALITY ASSURANCE

QUALITY ASSURANCE AUDITS

- MANAGE THE AUDIT PROGRAM FOR ALL SAFETY AFFECTING ACTIVITIES

CONSTRUCTION QUALITY ASSURANCE

- CONSTRUCTION MANAGER HAS THE BASIC RESPONSIBILITY TO SEE THAT THE APPROPRIATE QUALITY ASSURANCE PROGRAMS ARE DEVELOPED FOR THE CONSTRUCTION ACTIVITIES.

- THE A/E HAS THE SAME RESPONSIBILITY FOR A/E ACTIVITIES.

- THE SUPPLY SYSTEM, AS THE OWNER, HAS THE OVERALL RESPONSIBILITY AND MUST HAVE SUFFICIENT INVOLVEMENT AND OVERVIEW OF THE QUALITY ASSURANCE PROGRAM TO BE ASSURED IT IS ADEQUATE AND IMPLEMENTED.

CONSTRUCTION QUALITY ASSURANCE

CORPORATE CONSTRUCTION QUALITY ASSURANCE

- PARTICIPATES IN THE DEVELOPMENT AND MAINTENANCE FOR THE DESIGN/CONSTRUCTION QUALITY ASSURANCE PROGRAMS.
- CERTIFICATION OF EXAMINATION AND INSPECTION PERSONNEL TO ANSI N45.2.6 AND SNT-TC-1A.

PROJECT QUALITY ASSURANCE

- PARTICIPATE IN THE PROJECT'S DEFINITION OF THE QUALITY ASSURANCE PROGRAM.
  - PROCEDURE REVIEW FOR CLARITY AND QUALITY ASSURANCE REQUIREMENTS.
  - SPECIFICATION REVIEW—COMPLIANCE TO PSAR/FSAR REQUIREMENTS.
  - DESIGN CHANGE REVIEW—NCR'S, RFI'S, PED'S.
- VERIFY IMPLEMENTATION OF THE DESIGN/CONSTRUCTION QUALITY ASSURANCE PROGRAM AT THE PROJECTS.
  - SURVEILLANCE—INCLUDES CM, A/E, AND CONTRACTORS.
  - PREPURCHASED EQUIPMENT RECORD REVIEW.
  - PARTICIPATE IN THE TURNOVER PROCESS BY SAMPLING WALKDOWN, REVIEW OF RECORD PACKAGES AND PUNCHLIST ITEMS.
- ASSESSMENT OF PROJECT AND CONTRACTOR PERFORMANCE.
- INTERFACE WITH NRC--INSPECTIONS, 50.55(E), AND PART 21 EVALUATION AND REPORTING.

PROCUREMENT QUALITY ASSURANCE

IMPLEMENT A QUALITY ASSURANCE PROGRAM FOR VERIFICATION OF ACTIVITIES PERFORMED IN SUPPORT OF THE PROCUREMENT PROCESS.

- REVIEW AND CONCUR WITH PROCUREMENT DOCUMENTS (OTHER THAN FUEL).
  - FUEL PROCUREMENT CONTROLS PERFORMED BY OPERATIONS QA.
- ESTABLISH AND MAINTAIN THE EVALUATED VENDOR'S LIST.
- REVIEW AND APPROVAL OF VENDOR QA/QC PROCEDURES.
- PLAN AND PERFORM SURVEILLANCES AND AUDITS OF VENDORS INCLUDING INPROCESS MONITORING AND RELEASE FOR SHIPMENT.
- PERFORM RECEIVING INSPECTION OF ITEMS (OTHER THAN FUEL) RECEIVED AT THE SUPPLY SYSTEM WAREHOUSES.

OPERATIONAL ASSURANCE PROGRAM

PLANT ORGANIZATIONS REPORTING OFFSITE TO A MANAGER.

- QUALITY ASSURANCE
- NUCLEAR SAFETY ASSURANCE GROUP TO IMPLEMENT NUREG-0737.

CORPORATE GROUP REPORTING TO MANAGER, PROGRAMS AND SAFETY PERFORMANCE.

PLANT OPERATIONAL ASSURANCE PROGRAM

QUALITY ASSURANCE

- MEMBER POC
- MEMBER TWG
- REVIEWS PROCEDURES AND DOCUMENTS FOR INSPECTION HOLD POINTS AND QUALITY REQUIREMENTS.
  - ADMINISTRATIVE PROCEDURES
  - WORK ORDERS
  - SECTION XI REPAIR PLANS
  - PLANT MODIFICATION PACKAGES
- PERFORM SURVEILLANCE OF PLANT ACTIVITIES
- PERFORM QUALITY CONTROL (INSPECTION) FUNCTION
- PERFORM SURVEILLANCE OF TEST PROGRAM
- WEEKLY SURVEILLANCE FOR CLEANLINESS

NUCLEAR SAFETY ASSURANCE

- ASSESSMENT OF CONTROL ROOM PERFORMANCE
- OPERATING EXPERIENCE REVIEWS
- ASSESSMENT OF PLANT NUCLEAR SAFETY

CORPORATE GROUP REPORTING TO MANAGER, PROGRAMS AND SAFETY PERFORMANCE

- PERFORM ASSESSMENT AND TREND ANALYSIS
  - VERIFICATION ACTIVITIES—AUDITS, SURVEILLANCES, INSPECTIONS
  - SAFETY EVALUATIONS
  - REPORTABLES
  - DEFICIENCIES—NCR, CORRECTIVE ACTIONS
  - PLANT PERFORMANCE REVIEWS
  - OPERATING EXPERIENCE REVIEWS
- PROVIDE TECHNICAL STAFF FOR SUPPORT OF THE CORPORATE NUCLEAR SAFETY REVIEW BOARD (CNSRB)
- PERFORM TECHNICAL STUDIES OF SPECIAL SUBJECTS OR CONCERNS.

CORPORATE NUCLEAR SAFETY REVIEW BOARD

- DEFINED AND FUNCTIONING
- MEMBERSHIP AS FOLLOWS:

  G. D. BOUCHEY, CHAIRMAN

  R. B. GLASSCOCK, ALTERNATE CHAIRMAN

  W. C. BIBB

  P. K. SHEN

  J. W. SHANNON

  R. S. LEDDICK/J. W. WILSON

  R. G. MATLOCK/J. D. MARTIN

  R. W. ROOT/R. F. MAZURKIEWICZ

  MILES LEVERETT, NON-SUPPLY SYSTEM

  LEON ELIASON, NON-SUPPLY SYSTEM

  B. L. TWITTY, EXECUTIVE SECRETARY

  A. SQUIRE

  D. W. MAZUR

AUDITS

- SCHEDULE, PLAN, AND PERFORM AUDITS TO VERIFY CONFORMANCE TO REQUIREMENTS.
- PROVIDE REQUISITE TRAINING TO QUALIFY PERSONNEL FOR LEAD AUDITOR CERTIFICATION.

AUDIT PROGRAM INCLUDES ASSESSMENTS OF:

- CORPORATE ACTIVITIES
- CONSTRUCTION—INCLUDING AE/CM PROGRAM
- TEST AND STARTUP ACTIVITIES
- PLANT OPERATIONS
- FIRE PROTECTION PLAN
- SECURITY PLAN
- EMERGENCY PLAN

ASSESSMENTS INCLUDE:

- THE ADEQUACY AND IMPLEMENTATION OF THE QA PROGRAM
- CONFORMANCE TO TECHNICAL SPECIFICATIONS AND LICENSE CONDITIONS
- PERFORMANCE, TRAINING, AND QUALIFICATIONS OF PLANT STAFF
- RESULTS OF ACTIONS TAKEN TO CORRECT DEFICIENCIES:
  - IN EQUIPMENT, SYSTEMS, OR STRUCTURES
  - METHOD OF OPERATION THAT AFFECT NUCLEAR SAFETY

NUREG-0892, WNP-2 SER OUTSTANDING ISSUES

	ISSUE	NEXT ACTION	DUE DATE
1.	INTERNALLY GENERATED MISSILES	NRC	SSER
2.	TORNADO MISSILE PROTECTION FOR D/G EXHAUST	NRC	SSER
3.	ELECTRICAL EQUIPMENT QUALIFICATION	NRC	SSER
4.	MODIFICATION OF ADS LOGIC	NRC	SSER
5.	STANDBY SERVICE WATER I&C DESIGN	NRC	SSER
6.	CONTROL SYSTEMS FAILURES (IE-79-27, IE-79-22)	WNP-2	3/83
7.	EMERGENCY PLANNING PROGRAM	WNP-2	6/83
8.	CONTROL ROOM DESIGN REVIEW	WNP-2	5/83
9.	ATWS PROCEDURES	WNP-2	4/83
10.	CONTAINMENT ISOLATION DEPENDABILITY (OPERABILITY OF PURGE VALVES ONLY)	NRC	SSER
11.	PIPE BREAK IN BWR SCRAM SYSTEM	NRC	SSER
12.	STEAM BYPASS FROM STUCK OPEN WETWELL TO DRYWELL VACUUM BREAKER	NRC	SSER
13.	HEAVY LOAD HANDLING SYSTEM	NRC	SSER
14.	OPERATIONAL CHANGES	NRC	SSER

STATUS OF WNP-2 SER CONFIRMATORY ISSUES

NUMBER OF CONFIRMATORY ISSUES	22
NUMBER REQUIRING SUPPLY SYSTEM ACTION	11
NUBMER REQUIRING NRC ACTION	11

SCHEDULE FOR COMPLETION

SUPPLY SYSTEM

• PRIOR TO FUEL LOAD	8
• PRIOR TO COMMERCIAL OPERATION	3

NRC

• MARCH 1983	1
• APRIL 1983	10

MAJOR LICENSING MILESTONES/ACTIVITIES

1.	MAJOR ONSITE AUDITS BY NRC	
	— ENVIRONMENTAL QUALIFICATION OF EQUIPMENT	FEBRUARY 1983 (COMPLETE)
	— FIRE PROTECTION	MARCH 1983
	— POWER SYSTEMS	APRIL 1983
	— CONTROL ROOM DESIGN REVIEW	MAY 1983
2.	REGIONAL INSPECITON PROGRAMS	
	— SECURITY SYSTEMS	MARCH 1983 JULY 1983
	— CONSTRUCTION	ON-GOING
	— TEST AND START-UP	ON-GOING
	— OPERATIONS	ON-GOING
3.	PREHEARING CONFERENCE ON CONSTRUCTION PERMIT EXTENSION	JANUARY 1983 (COMPLETE)
4.	SUPPLY SYSTEM SUBMITTAL OF ALL INFORMATION NEEDED TO RESOLVE REMAINING OPEN ITEMS	APRIL 1983
5.	EMERGENCY PREPAREDNESS DRILL COMPLETE	JUNE 1983
6.	REACTOR OPERATOR LICENSE EXAMS COMPLETE	JULY 1983
7.	NRC ISSUES FINAL SUPPLEMENTAL SAFETY EVALUATION REPORT	JULY 1983
8.	OPERATING LICENSE ISSUED	AUGUST 1983
9.	WNP-2 FUEL LOAD/LOW POWER OPERATION	SEPTEMBER 1983

CONCLUSIONS

- NO MAJOR LICENSING OR QUALITY ISSUES
- OUTSTANDING ISSUES WILL BE RESOLVED IN A TIMELY MANNER
- LICENSING AND ASSURANCE ORGANIZATION PREPARED TO SUPPORT PLANT OPERATION
  - PROGRAMS
  - PERSONNEL

WNP-2 PLANT VERIFICATION PROGRAM

John R. Honekamp

Technical Assistant to Managing Director

ACCEPTANCE REVIEW PLANS

R. L. FERGUSON LETTER OF JANUARY 22, 1981

. . . DEVELOP DETAILED "ACCEPTANCE REVIEW" PLANS FOR EACH OF OUR PROJECTS WHICH WILL ASSURE A THOROUGH, SYSTEMATIC REVIEW BY SUPPLY SYSTEM PERSONNEL OF OUR NUCLEAR PLANTS PRIOR TO TURNOVER FROM OUR CONTRACTORS FOR COMMERCIAL OPERATION AND WHICH WILL CONSTITUTE A WELL-DOCUMENTED BASIS FOR MY ACCEPTANCE OF PLANT COMPLETION, SAFETY AND TECHNICAL ADEQUACY.

. . . FOR WNP-2, SPECIAL CONSIDERATION SHOULD BE GIVEN TO ASSURING THAT ANY UNDETECTED QUALITY DEFECTS THAT SIGNIFICANTLY AFFECT PLANT PERFORMANCE OR SAFETY WOULD BE IDENTIFIED AND CORRECTED IN THE COURSE OF OUR FUNCTIONAL TESTING AND ACCEPTANCE REVIEWS.

PLANT COMPLETION PLAN

- Phase I (up to fuel load) issued December 1981
- Line management tool to document plant acceptance process.
- December 1981 issue contained basic elements needed to confirm WNP-2 designed and constructed as committed plus organization and operational readiness
  - — Line management review and signoffs
  - — Comprehensive scope

Construction
Emergency Preparedness
Engineering
Environmental Requirements
Health Physics/Chemistry
Industrial Safety/Fire Protection
Legal/Financial
Nuclear Fuel
Operational Readiness
Preoperational Testing
Quality Assurance
Records
Regulatory/Licensing
Security
Startup Testing
Supplies Management/ Logistics Planning
Milestone Schedule

822139-27A

MARCH 1982 REASSESSMENT

- Assigned Technical Specialist to Managing Director's office with responsibility for independent technical audit of WNP-2 and overview of plant acceptance process.
- Prepared Plant Verification Report to document basis for our confirmation WNP-2 designed and constructed as committed.
- Added independent requirements and design reverification reviews.
- Brought in outside Technical Auditor to:
  - — Review adequacy of our program
  - — Monitor implementation of key elements
  - — Report findings to Managing Director

822139-28A

PLANT VERIFICATION INCLUDES

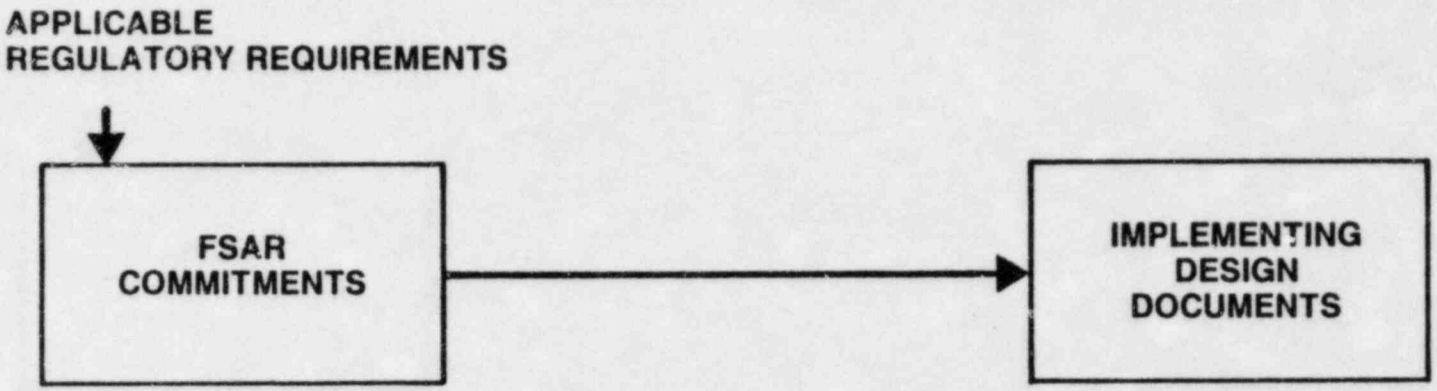
	March 1982 Reassessment
• Requirements Verification	• Independent Reverification by Supply System organization responsible for configuration control after fuel load.
• Design Verification	• Outside technical audit of plans, implementation and results.
• Construction Verification — Restart Program — Strengthened QA Program — Quality Verification Program	• Outside technical audit of management response to post-restart quality problems • Outside technical audit of quality verification program implementation
• Performance Verification	• Program overview by outside technical audit.
• Operating Envelope Verification	• Technical Specification review by same organization performing reverification reviews.

822139-29A

SCOPE OF REVIEW

- **Requirements Reverification**
  - — Multidiscipline
  - — More than 125 FSAR/Design Document Checks
- **Design Reverification**
  - — Three System Design Reviews (HPCS, RHR, RFW)
    - Multidicipline
    - System Design Level Checks
    - Component Design Level Checks
  - — Three Cross-system Interactive Reviews
    - Fire Protection
    - Equipment Qualification
    - Pipe Break, Missile, Flooding

REQUIREMENTS REVERIFICATION



- Verify FSAR commitments are met by implementing design documents on sample basis.
- Formal completeness review of requirements against detailed checklist.

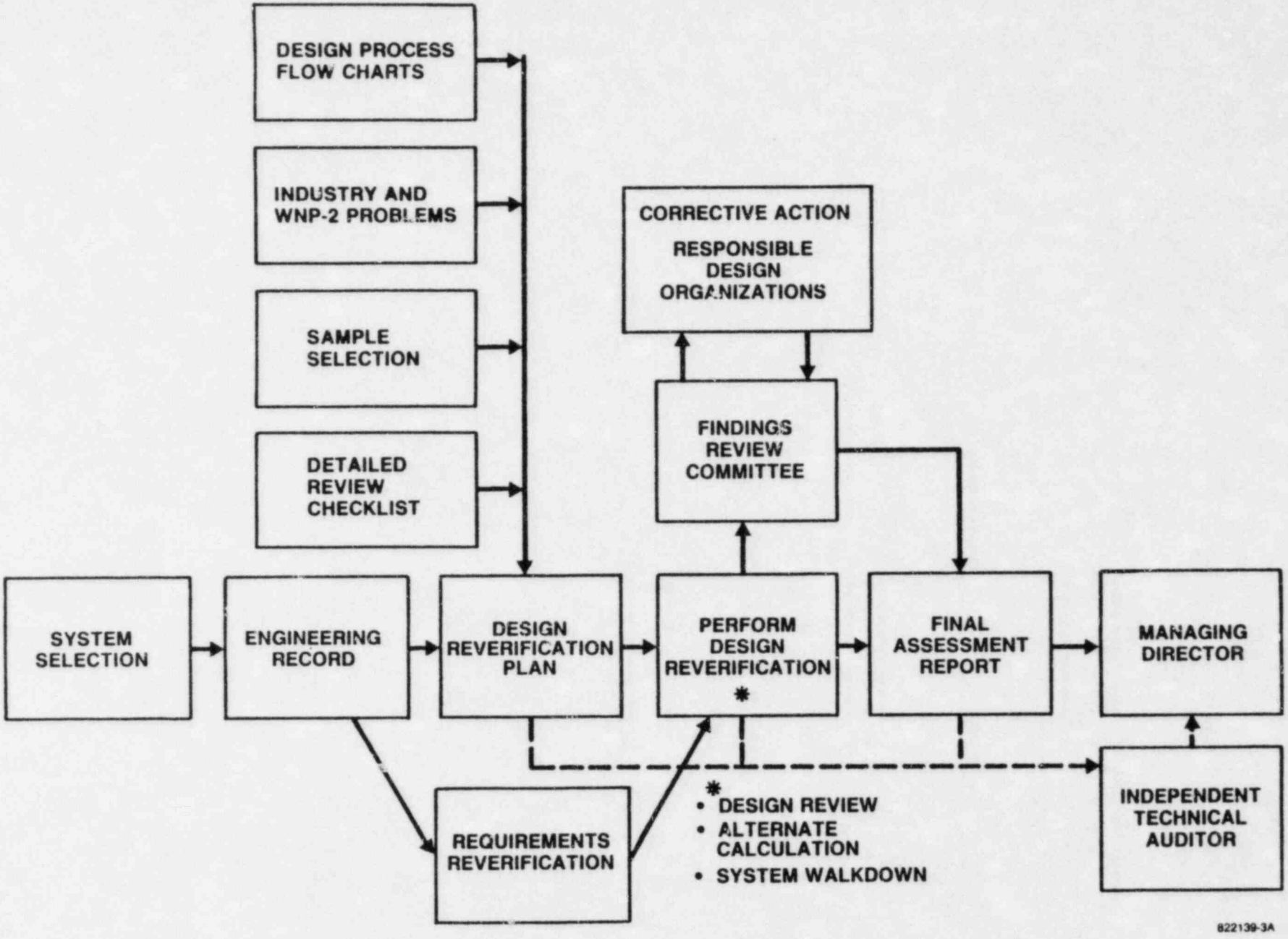
822139-41A

REVIEW AREAS ADDRESSED

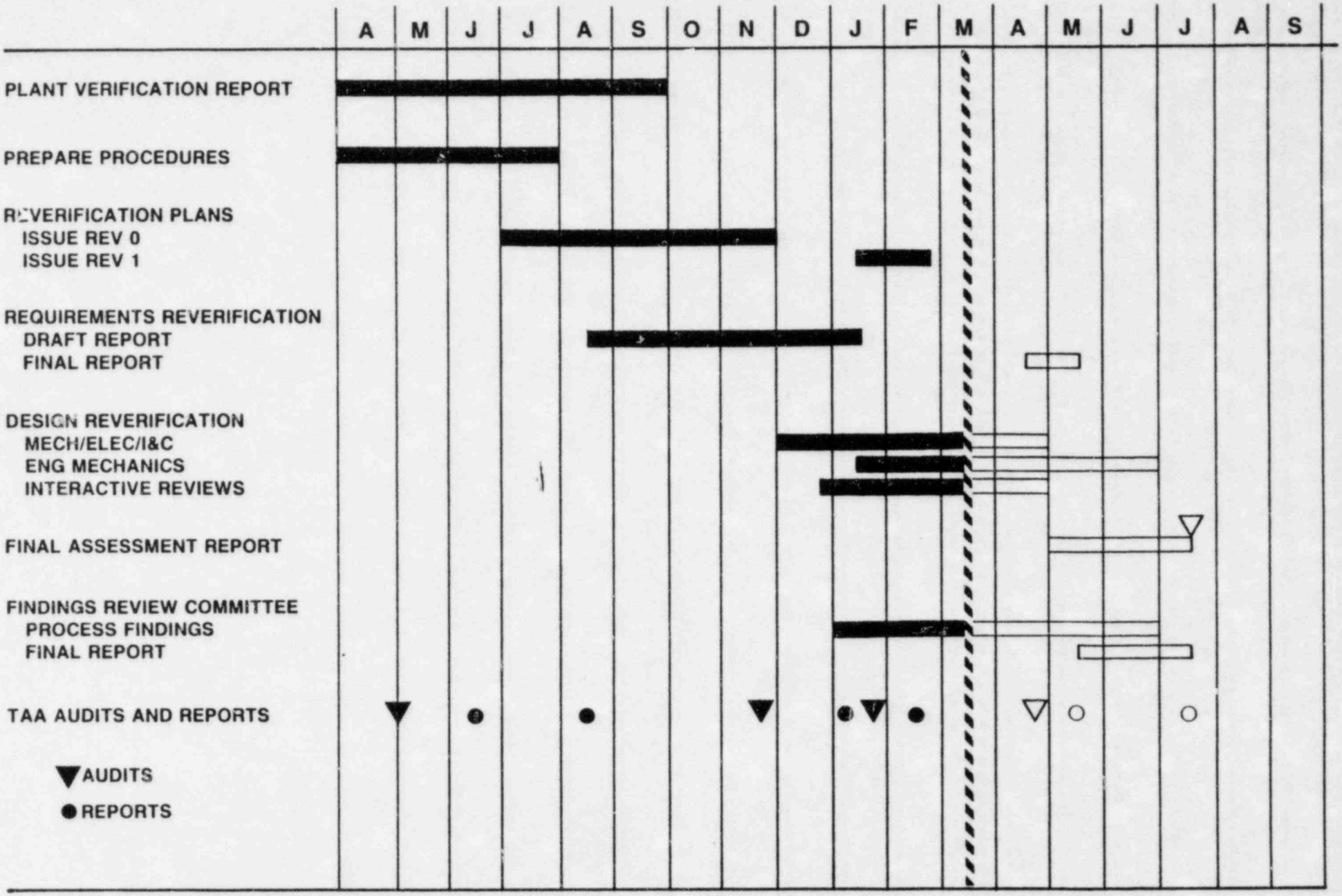
REQUIREMENTS REVERIFICATION CHECKLIST QUESTION	MECHANICAL	INSTRUMENT & CONTROL	ELECTRICAL	ENGINEERING MECHANICS
1. Functions of the system and the major components and structures of the system.	HPCS, RHR	HPCS, RHR RFW		HPCS, RHR
2. Performance requirements such as capacity, rating, and system output.	HPCS, RFW		HPCS	Generic
3. Codes, standards, and regulatory requirements including the applicable issue and/or addenda.	HPCS, RFW*	RFW and Generic	Generic*	Generic*
4. Design conditions such as pressure, temperature, fluid chemistry and voltage.	Q-12	Q-8	Generic	Note 1
5. Loads such as seismic, wind, thermal, and dynamic.		RFW and Generic	Generic	Generic
6. Environmental conditions anticipated during operation such as pressure and temperature.	HPCS, RHR, RFW	Generic	Generic	Generic
7. Interface requirements including definition of the functional and physical interfaces.	RFW	Generic		Generic
8. Material requirements including such items as compatibility, electrical insulation properties, protective coating, and corrosion resistance.	Generic	Generic*	Generic	Generic*
9. Mechanical requirements such as vibration, stress, shock, and reaction forces.		Q-6	Q-5	Generic
10. Structural requirements covering such items as equipment foundations and pipe supports.				Generic
11. Hydraulic requirements such as pump net positive suction head, allowable pressure drops, and allowable fluid velocities.	HPCS			
12. Chemistry requirements such as provisions for sampling and imitations on water chemistry.	RHR			
13. Electrical requirements such as source of power, voltage, raceway requirements, electrical insulation, and motor requirements.			Generic	
14. Layout and arrangement requirements.	HPCS, RHR	Q-17	Q-17	
15. Operational requirements under various conditions.	HPCS	Q-6	Generic	Generic
16. Instrumentation and control requirements including indicating instruments, controls and alarms.		HPCS, RHR, RFW		
17. Redundancy, diversity, and separation requirements of structures, systems and components.	HPCS, RHR	Generic	HPCS, RHR and Generic	Generic
18. Failure effects requirements of structures, systems, and components.	HPCS, RHR, RFW	Q-6 and Q-17	Generic	Q-17
19. Test requirements including in-plant tests and the conditions under which they will be performed.	HPCS, RHR RFW	HPCS, RHR	HPCS, RHR	Generic
20. Fire protection or resistance requirements.	Q-3 and Fire Protection Review	Q-3 and Fire Protection Review	Generic, Q-5 and Fire Protection Review	
21. Materials, process, parts, and equipment suitable for application.	HPCS and Q-8			Generic
22. Safety requirements for preventing personnel injury.	RFW		Generic	

*Potential Finding Report
Note 1: FSAR does not contain this level of detail

FLOW CHART: REQUIREMENTS AND DESIGN REVERIFICATION



SCHEDULE



830458-3A

STATUS - MARCH 1983

- 18,000 manhours in Requirements and Design Reverification Reviews

- 6,000 pages of design documents reviews (drawings, calculations, specification, tech. memos, etc.)

- 44 potential findings reports issued
  - — 21 classified as observations
  - — 9 classified as findings (1 reportable)
  - — 2 not valid
  - — 12 under review

830458-4A

ASSURANCE OF INDEPENDENCE IN REQUIREMENTS AND DESIGN REVERIFICATION REVIEWS

- Independence of reviewers
- Findings Review Committee
- Program control from the Managing Director's Office
- Program review and audit by outside Technical Auditor

822139-30A

INDEPENDENCE OF REVIEWERS

- Reviewers accountable to Technology Management not WNP-2 Program.
- Reviewers are competent engineers from groups other than those who performed the original design.
- Reviewers must meet independence criteria specified by the Managing Director's Office.

FINDINGS REVIEW COMMITTEE

- Reports to the Managing Director's Office
- Independent assessment of the significance of the findings and proposed corrective action.
- Senior technical personnel who meet same independence criteria as reviewers.
- Representatives from
  - — Power Generation
  - — Licensing and Assurance
  - — WNP-1 Engineering

822139-33A

PROGRAM CONTROL FROM THE MANAGING DIRECTOR'S OFFICE

- Approval of requirements and design reverification scope and scope changes.
- Approval of personnel assignments to assure independence.
- Approve Findings Review procedure.
- Monitor findings.
- Develop and implement independent technical audit program.

822139-34A

EXTERNAL TECHNICAL AUDIT

- **Technical Audit Associates (TAA)**
  - — Specializes in technical auditing
  - — Large panel of highly qualified senior technical and management personnel
- **The TAA Contract**
  - — Managed from the Managing Director's Office
  - — Provides for:
    - Review of the adequacy of the Plant Verification Program (complete)
    - In-process technical surveillance and periodic audits of the program implementation (ongoing)
    - Written reports direct to the Managing Director (no review of draft reports)

EXTERNAL TECHNICAL AUDIT
(continued)

- **Scope of TAA activities**
  - — Requirements and design Reverification
    - Review of design reverification plans
    - In-process technical surveillance of reverification activities
    - Periodic audit
    - Review and evaluation of final report
  - — Construction verification
    - Evaluate adequacy of QVP implementation
    - Assess effectiveness of management actions to resolve quality problems identified since restart
  - — Performance and operating envelope verification
    - Overview of basic programs