U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No: 50-244/90-03 License No. DPR-18

Licensee: Rochester Gas and Electric Corporation (RG&E)

Facility: R. E. Ginna Nuclear Power Plant

Dates: February 21 through March 23, 1990

Inspectors: C. S. Marschall, Senior Resident Inspector, Ginna
N. S. Perry, Resident Inspector, Ginna
J. T. Yerokun, Reactor Engineer, DRS

Approved by: Ebe C. McCabe, Jr 4/16/90
E. C. McCabe, Chief, Reactor Projects Section 3B Date

SCOPE

This inspection report documents routine and reactive inspections, during day and backshift hours, of station activities including: operations; radiological controls; maintenance/surveillance; security; engineering/technical support; and safety assessment/quality verification.

FINDINGS

Overall, safe facility operation was found. A concern for the appropriate identification of discrepant conditions for resolution was raised. (Details 2 and 3.1)

The inspectors identified one violation of security plan requirements and one unresolved item. The unresolved item concerns non-safety-significant errors in the Final Safety Analysis Report (FSAR) and Ginna Technical Specifications (TSs). Additionally, two licensee identified, non-cited violations were noted. These non-cited violations concern separate problems in the fire protection program.

EXECUTIVE SUMMARY

Plant Operations: During plant shutdown for refueling, a trip occurred on a source range detector failure with the reactor already subcritical. Operator responses were timely and appropriate. Operations supervision was good during and after the trip. Also, operators were thoroughly knowledgeable concerning plant computer problems. There were two non-cited licensee-identified fire protection violations.

Radiological Controls: Housekeeping was good overall, but some clutter was evident. After accompanying radiation protection personnel on a weekly plant tour, the inspectors concluded that the standards for such tours should be raised and that discrepancies should be documented and communicated to the cognizant manager. The manager of chemistry and health physics committed to pursue improving such communications.

Maintenance/Surveillance: Overall, maintenance was well planned and was accomplished by knowledgeable technicians, and surveillance was thorough and well controlled. Inspectors observed Residual Heat Removal system surveillance, weekly cleaning of the boric acid storage tank level sensing lines, and turbine overspeed trip testing. Containment Integrated Leak Rate Testing was reviewed by a regional inspector. The knowledge of technicians involved in module replacement and calibration of nuclear instrumentation was very good. Several discrepancies were found in the calibration procedures and uncontrolled labels were observed in instrument cabinets. The licensee corrected the procedures, and will review the program to upgrade labels. Discrepancies noted by the NRC were known to the technicians, but it was not clear that the technicians' concerns were known to management. Continued management attention to worker concerns appears warranted.

Security: An access control violation was identified by the inspectors. Ginna security managers presented an aggressive program to upgrade security hardware and improve security staffing and organization.

Engineering and Technical Support: Acceptable Emergency Diesel Generator (EDG) start logic was found. A non-safety-significant error in the Updated FSAR and Technical Specifications concerning bypass of non-essential EDG trips is unresolved. The inspectors asked RG&E to review the adequacy of the EDG start logic testing performed each cycle.

Safety Assessment/Quality Verification: Completed actions from the Ginna Nuclear Concerns List of 1988 show overall success in achieving goals. For two concerns, substantial progress had been made but the inspectors were unable to ascertain the licensee's basis for judging the items to be complete. On March 6, RG&E met with NRC Region I to present a comprehensive configuration management program expected to be completed in four years. That program indicates a substantive management commitment to more comprehensive maintenance and engineering support.

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DETAILS

1. Plant Operations

1.1 Control Room Observations

The inspectors reviewed control room log books to obtain information concerning trends and activities, and observed recorder traces for abnormalities. The inspectors verified correct alignment of selected engineered safety feature valves and breakers, and portions of the containment isolation lineup. The inspectors verified compliance with plant technical specifications and audited selected safety-related tagouts. All accessible areas of the plant were toured and plant conditions and activities in progress were observed by the inspectors with no inadequacies identified. Control room staffing was adequate and operators exercised control over access to the control room. Operators adhered to approved procedures and understood the reasons for lighted annunciators. Shift turnovers were adequate to address necessary information. The inspectors concluded that the R. E. Ginna Nuclear Power Plant had operated safely and in conformance with license and regulatory requirements.

Among the operations documents reviewed were:

-- Ginna Station Event Report (A-25.1) Number 90-09, concerning computer logs out of service.

-- Ginna Station Event Report (A-25.1) Number 90-10, concerning dirty switch contact in Delta T circuitry.

-- Ginna Station Event Report (A-25.1) Number 90-11, concerning unlocked high radiation area.

-- Ginna Station Event Report (A-25.1) Number 90-13, concerning flow transmitter out of calibration.

-- Ginna Station Event Report (A-25.1) Number 90-14, concerning flow transmitter out of calibration.

-- Ginna Station Event Report (A-25.1) Number 90-15, concerning overflow of recycle evaporator feed tank.

-- Ginna Station Event Report (A-25.1) Number 90-16, concerning failed heat trace transformer.

-- Ginna Station Event Report (A-25.1) Number 90-17, concerning erroneous fire alarm.

-- Ginna Station Event Report (A-25.1) Number 90-18, concerning inadequate fire watch tour.

-- Ginna Station Event Report (A-25.1) Number 90-19, concerning incorrect fire watch tour.

-- Ginna Station Event Report (A-25.1) Number 90-20, concerning chlorine analyzer out of calibration.

-- Ginna Station Event Report (A-25.1) Number 90-21, concerning ammonia analyzer out of calibration.

-- Ginna Station Event Report (A-25.1) Number 90-22, concerning burned service water pump.

-- Ginna Station Event Report (A-25.1) Number 90-23, concerning broken boric acid cleaning rod.

-- Ginna Station Event Report (A-25.1) Number 90-24, concerning computer logs out of service.

-- Ginna Station Event Report (A-25.1) Number 90-25, concerning erroneous main control board alarm.

-- Ginna Station Event Report (A-25.1) Number 90-26, concerning addition of sulfuric acid to boric acid batch tank.

-- Ginna Station Event Report (A-25.1) Number 90-27, concerning source range detector failure.

Each Ginna Station Event Report was reviewed to insure plant personnel took appropriate corrective action and observed the appropriate Limiting Conditions of Operation. No inadequacies were identified.

On two occasions during the inspection period, operators experienced difficulty accessing the plant computer when the computer was engaged in another task. On each occasion, the inspector questioned the operators concerning the log entry; operators were thoroughly knowledgeable of the cause of the computer problem and had initiated action to effect short-term corrective action and long-term resolution. Computer personnel are exploring the feasibility of a provision which would allow the operators to force accessibility of the computer in an emergency.

During the plant shutdown on March 23, 1990, source range detector N31 failed (after the plant was made subcritical), causing a reactor trip on high flux. Operators were performing the shutdown using Operating Procedure (O)-2.1, Normal Shutdown to Hot Shutdown, Revision 59, effective March 23, 1990. The trip was immediately apparent to the operators, who responded by performing the required steps in

Emergency Procedure (E)-0, Reactor Trip or Safety Injection, Revision 10, effective July 21, 1990, before continuing with the shutdown. The inspectors observed control room activities during this part of the shutdown and concluded that operator actions were performed in a timely manner. Throughout the shutdown, operations supervision was actively involved in overseeing control room activities. The inspectors noted particularly good management oversight during and after the reactor trip.

1.2 Fire Protection

On February 25, 1990, the standby auxiliary feedwater building fire detection instrumentation was inoperable and a fire penetration seal in the auxiliary feed pump area was degraded. Technical Specifications 3.14.1.1 and 3.14.6.1 required the establishment of an hourly fire watch patrol. The shift supervisor discovered that these hourly fire watch tours were not being performed as required. The shift supervisor immediately assigned an auxiliary operator to tour the areas on an hourly basis and notified the Fire and Safety Department. Security personnel routinely tour these spaces on an hourly basis. However, routine security tours do not necessarily result in an entry into these areas at least once per hour. Security computer records indicated that, in some instances, more than one hour had elapsed between entries. Plant management determined that this was a violation of Ginna Technical Specifications and was reportable under 10 CFR 50.73. To prevent recurrence, routine security tours will no longer be used to take credit for required fire watch tours; a dedicated person will be used.

A Notice of Violation was not issued for this event because: it was licensee identified; it was of minor safety significance; it was reported properly; immediate corrective measures were appropriate; acceptable actions are being taken to prevent recurrence; and no previous violations were identified for which licensee actions would have prevented this occurrence. (50-244/90-03-01)

On February 26, 1990, during a shift turnover meeting, fire watch personnel discovered that a required hourly inspection was performed for the wrong area. An hourly fire watch was immediately established for the required area. In this case, the fire detection systems for the "A" and "B" battery rooms had been disconnected to support modification work. Technical Specification 3.14.1.1 requires inspection of these areas at least once per hour. For approximately 5 hours, hourly inspections were conducted for the "A" and "B" emergency diesel generator rooms instead of the battery rooms, due to personnel error. During that 5-hour period, security personnel entered the battery rooms 10 times, but credit was not taken for fire watch inspections because of the management decision on February 25, 1990 (see discussion above). Plant management determined that this was a violation

of Ginna Technical Specifications and was reportable under 10 CFR 50.73. To prevent recurrence, fire watch personnel will be issued individual assignment cards with the sequence of areas to inspect. Also, the handwritten notes previously used to update the fire system status board will be replaced with printed stickers.

A Notice of Violation was not issued for this event because: it was licensee identified; it was of minor safety significance; it was reported properly; immediate corrective measures were appropriate; acceptable actions are being taken to prevent recurrence; and no previous violations were identified for which licensee actions should have prevented this occurrence. (50-244/90-03-02)

2. Radiological Controls

The inspectors periodically confirmed that radiation work permits (RWPs) were effectively implemented, that dosimetry was correctly worn in controlled areas and dosimeter readings were accurately recorded, that access to high radiation areas was adequately controlled, and that postings and labeling were in compliance with procedures and regulations.

On March 5, the inspector accompanied a radwaste health physics (HP) engineer and an HP foreman on a tour of the auxiliary building. The tour, required by Administrative Procedure A-54.6, Health Physics Tour, Revision 11, effective March 24, 1989, is performed weekly to observe general appearance and potential radiation, security and fire hazards, to check for outdated procedures and calibrations, and to verify that areas are properly posted and barricaded as required by station procedures.

Overall, management attention to good housekeeping and radiation protection practices was evident. However, rolls of tape and other consumable supplies were left in random locations throughout the plant, and trash cans for clean and contaminated waste were labelled with hand-lettered pieces of masking tape. The radwaste HP engineer performing the inspection indicated that: some clutter was acceptable; most clutter was left by personnel from other departments; managers from other departments did not conduct tours; and it was not his job to police the activities of other departments.

The inspector concluded that the observed standards for acceptable housekeeping were too low. In addition, the radwaste HP engineer did not document discrepancies, such as his perception of the lack of management tours by other departments, and raise them to an appropriate level of management for a corrective action decision.

The inspector discussed the results of the tour with the manager of chemistry and health physics; the manager committed to pursue improved communication of management practices to the workers and of worker-identified weaknesses to management.

3. Maintenance/Surveillance

3.1 Maintenance Observations

The inspectors observed portions of various safety-related maintenance activities to assess whether: redundant components were operable; activities did not violate limiting conditions for operation; personnel obtained required administrative approvals and tagouts before initiating work; personnel used approved procedures or the activity was within the "skills of the trade;" workers implemented appropriate radiological controls and ignition/fire prevention controls; and equipment was tested properly prior to returning it to service. Portions of the following maintenance activities were observed:

-- Calibration Procedure (CP)-36, Intermediate Range N36 Calibration and/or Maintenance, Revision 16, effective June 23, 1989, observed March 15, 1990. Instrumentation and control (I&C) technicians replaced a failed power supply module under maintenance work order 9000448. The inspector concluded that the technicians were very knowledgeable and that the work was done in a professional and methodical fashion. Also, the inspector concluded that, although the technicians had not used a meter to check for voltage on the cables, sufficient care was taken in handling the cables to avoid personal injury. However, the inspector noted a mixture of controlled and uncontrolled jack labels on various modules associated with the intermediate range nuclear instrument.

-- CP-35, Intermediate Range N35 Calibration and/or Maintenance, Revision 14, effective June 23, 1989, observed March 22, 1990. I&C technicians calibrated N35 in preparation for the plant shutdown on March 23. A significant amount of uncontrolled labelling was evident in the relay room. The I&C technicians stated that the labels were included in an upgrade program, and the room is scheduled to receive engraved labels after the 1990 outage. During the calibration the inspector noted that the procedure required adjustments to N35 using the logarithmic meter face for indication. Several of the settings required accuracy greater than the technicians could achieve using the meter face. For example, step 5.13.5 required adjustment of a potentiometer until the indication on the N35 meter face was 5 E-11 (+/- 1%). Increments on the meter face are 4 E-11, 5 E-11, 6 E-11, and so on. The tolerance of 1% requires an adjustment between 4.95 E-11 and 5.05 E-11. The I&C technicians agreed that the required tolerance could not be discerned on the meter face.

Technical support management indicated the procedure weakness was the result of a practice carried over from calibration of the power range instruments which use a linear scale and, prior

to the end of the inspection period, had corrected the procedure with values from the technical manual which can be read on the meter face.

The inspector also noted that the technicians were careful to inform operators prior to taking any action which caused an alarm condition; however, CP-35 did not contain provisions or requirements for this notification. The inspector concluded that the practice of alerting operators prior to an alarm condition is a good practice; the I&C supervisor indicated that this practice will be incorporated into maintenance procedures through the maintenance procedure upgrade project (PUP).

Overall, the maintenance activities were well planned and accomplished by knowledgeable technicians. The discrepancies noted by the inspector were known to the technicians; however, it is not clear the technicians' concerns were known to management. The inspector concluded that continued management attention to insure that workers elevate their concerns appears to be warranted.

3.2 Surveillance Observations

Inspectors observed portions of surveillances to verify proper calibration of test instrumentation, use of approved procedures, performance of work by qualified personnel, conformance to limiting conditions for operation, and correct system restoration following testing. Portions of the following surveillances were observed:

-- Periodic Test (PT)-2.2M, Residual Heat Removal System - Monthly, Revision 0, effective date February 9, 1990, observed March 3, 1990.

-- PT-21, Cleaning Boric Acid Tank Level Sensing Lines, Revision 11, effective date March 2, 1989, observed March 22, 1990.

-- Turbine Systems Operating Procedure (T)-18C, Turbine Overspeed Trip Test, Revision 14, effective date November 8, 1989, observed March 23, 1990.

No inadequacies were identified during performance of the surveillances. The cleaning of the boric acid tank level sensing lines on March 22, 1990 was carefully performed by qualified technicians. Independent verification of valve positions was correctly performed and documented.

3.3 Review of "Ginna Containment Integrated Leak Rate (CILRT) Test Report - May 1989"

The inspector reviewed the licensee's May 1989 CILRT results documented in accordance with 10 CFR 50, Appendix J, Paragraph V.B. These results were summarized in a technical document entitled "Reactor Containment Building Integrated Leak Rate Test" and were attached to the licensee's letter dated October 18, 1989 to the NRC. The report contains a test summary and general test description, presentation of test results, and other data such as description of plant and computer software, and data analysis techniques.

The Mass Point calculation method of ANSI/ANS 56.8-1987 was utilized. This method is acceptable per 10 CFR 50, Appendix J.

The purpose of the test was to demonstrate that leakages through the primary containment building and systems penetrating the containment do not exceed that allowed by plant technical specifications. The test was conducted with containment isolation valves and containment pressure boundaries in their post-accident positions. The containment met the leakage criterion in the "as-left" condition. The "as-found" criterion was also met. The test was followed by a successful verification test.

Results are presented below:

A. Type A Test Parameters

1. Test Method	Absolute
2. Calc. Method	Mass Point
3. Test Duration:	
Stabilization	5 hours
Test Period	24 hours
Verification	4 hours
4. Test Pressure	35.8 psig (Reduced)

B. Test Results

	wt % /day
1. Maximum Allowable Leak Rate (Lt)	0.1528
2. Acceptance Criteria 0.75Lt	0.1146
3. "As-Found" Measured Leak Rate	0.0463
4. "As-Left" Measured Leak Rate	0.0463
5. Conclusion	Acceptable

The inspector performed independent calculations of the containment leakage rates and concluded that the containment has met its acceptance criteria for leakages in both the "as-left" and "as-found" conditions.

4. Security

During this inspection period, the resident inspectors verified x-ray machines and metal and explosive detectors were operable, Protected Area (PA) and Vital Area (VA) barriers were well maintained, personnel were properly badged for unescorted or escorted access, and compensatory measures were implemented when necessary.

4.1 Security Improvement Program

On March 7, 1990, Ginna security management briefed the inspectors on hardware upgrades and changes in manning and organization which have recently been accomplished or are proposed. The improvements address items identified in NRC inspections, and indicate that RG&E is committed to a program to upgrade security at Ginna and address discrepancies identified by the NRC.

4.2 Access Control

A violation of security plan requirements for access controls occurred during this inspection period. Details are contained in Appendix B to this report's forwarding letter.

4.3 Violation 50-443/89-08-02 (Closed)

This violation was for an inadequately secured vital area barrier. The inspectors concluded that licensee corrective actions were effective, and that the barrier now meets the requirements of the Ginna Security Plan and regulatory requirements.

5. Engineering/Technical Support

5.1 Bypass of Nonessential Emergency Diesel Generator (EDG) Trips

The inspectors reviewed the detailed logic for diesel engine trips to follow-up on a potentially generic issue wherein emergency diesel engine nonessential protective trips are not bypassed on loss of power.

The following wiring diagrams were reviewed:

-- 33013-1986, Metering and Trip Flow Diagrams, Emergency Diesel Generator 1B.

-- 33013-710B, Diesel Generator 1B Elementary Wiring Diagram.

The following documents were reviewed:

-- Ginna UFSAR, Section 8.2 - 8.3.

-- Ginna Technical Specification 4.6.1.

-- RSSP-2.2, Diesel Generator Load and Safeguard Sequence Test, Revision 36, effective June 5, 1989.

Nonessential emergency diesel generator trips are bypassed during a Loss of Coolant Accident (LOCA), i.e., a safety injection signal, but not during a Loss of Offsite Power (LOOP) transient. The nonessential trips are: reverse power, overcurrent, and local stop (pushbutton). The bypass feature is required to be verified at least once per 18 months by Ginna Technical Specifications and is tested during performance of RSSP-2.2 during the annual refueling outage. The diesel engine trip logic is designed to assure reliable operation of the emergency diesel generator; logic channels are powered from separate reliable sources with sufficient isolation devices to prevent a single failure from disabling both diesel generators. Region I Temporary Instruction 87-04 is closed.

During inspection of the emergency diesel generator trip logic, the inspectors noted an error in the Ginna FSAR and Technical Specifications. Both documents state that diesel generator trips are automatically bypassed upon loss of voltage on the emergency bus and/or a safety injection actuation signal. The wiring diagrams indicate that the trips are bypassed on a safety injection actuation signal only. RG&E engineering indicated that the discrepancy would be corrected. This item is unresolved pending correction of the Ginna FSAR and Technical Specifications. (UNR 90-03-04)

The inspectors compared Ginna Technical Specification (TS) EDG surveillance requirements with Standard Technical Specification (STS) surveillance requirements. Ginna TS 4.6.1.d requires that each EDG be demonstrated operable once each 18 months by verifying auto-start from normal standby on a simulated LOOP in conjunction with a Safety Injection (SI) test signal. STS 4.8.1.1.2 requires that each EDG be demonstrated operable once each 18 months by verifying auto-start from normal standby on a simulated LOOP by itself, on an Engineered Safety Feature (ESF) signal without LOOP, and on a simulated LOOP in conjunction with an ESF signal. Ginna TSs do not require verifying auto-start on a LOOP by itself or on an ESF actuation without a simulated LOOP. In view of the design purpose of the emergency diesels, Ginna management committed to include verification of closure of the LOOP and SI start contacts in the surveillance procedure for diesel auto-start on LOOP in conjunction with an SI signal.

5.2 Unresolved Item 50-244/89-04-04 (Closed)

Failure of fire door closure. In response to the repeated failure of the fire door to automatically close completely, plant management posted a continuous fire watch to ensure door closure. A minor modification was proposed to install alarm contacts on the door to alert security personnel if the door fails to close. The long term action is a major modification to eliminate the pressure differential across the door and is scheduled for the spring of 1991. The inspectors concluded that the corrective actions in place adequately assure door closure.

6. Safety Assessment/Quality Verification

6.1 Evaluation of Tool Dropped in the Boric Acid Storage Tank

On March 8, 1990, during cleaning of the boric acid tank level sensing lines, the cleaning tool broke and part of it fell into the tank. The part which fell into the tank was a stainless steel rod approximately 3/8 inch in diameter and 90 inches in length. Based on review of a safety evaluation, the Plant Operations Review Committee concluded that operation could continue since the rod would remain in the tank and could not cause damage to or affect operation of any component. The inspectors reviewed the evaluation and determined that the results were adequate. Plant personnel plan to recover the rod during the annual refueling outage.

6.2 Inspection of Completed Nuclear Concerns List Actions

In January 1989, at a management meeting between Rochester Gas and Electric and NRC Region I, RG&E presented a list of more than eighty nuclear concerns. Prior to conclusion of the meeting, RG&E committed to select items from the concerns list for accomplishment prior to the end of 1989. On December 4, 1989, RG&E presented a list of the seventeen items which had been selected for action and completion during 1989. Thirteen of the items are considered complete by the licensee. The resident inspectors reviewed licensee actions for each of the thirteen items to assess RG&E management effectiveness. The thirteen items inspected were:

-- Administrative Procedure Training
-- Procedure Adherence Reinforcement
-- 10 CFR 50.59 Reviews
-- Maintenance Work Planning/Control
-- Interim Q Determination Program
-- In-Service Inspection (ISI) Program Review
-- Piping and Instrumentation Drawing (P&ID) Walkdowns
-- In-Service Testing Valve Test Program
-- 10 Year ISI Program
-- Primary Heat Exchanger Inspection

-- Chemical Control Program
-- Operational Experience Review
-- P&IDs

Most concerns substantially predated the existence of the Nuclear Concerns list; detailed action plans had previously been created and were implemented in 1989. There were two notable exceptions in the areas of administrative procedure training and procedure adherence reinforcement. RG&E management did not establish a clear concern or a plan of action for these two concerns. RG&E has periodically encountered procedure adherence problems during 1989 and 1990, and the inspectors observed that a clear realization of the procedure adherence mandate is not yet evident at all levels of the licensee's organization. Overall, however, management was successful in achieving intended goals.

6.3 Periodic and Special Reports

Upon receipt, periodic and special reports submitted by the licensee pursuant to Technical Specifications 6.9.1 and 6.9.3 were reviewed. This review included whether the reports contained information required by the NRC, the test results and/or supporting information were consistent with design predictions and performance specifications, and the reported information was valid. The following reports were reviewed:

-- Monthly Operating Reports for January and February 1990.

6.4 NRC - RG&E Management Meeting

On March 6, 1990, RG&E management met with NRC Region I management in the NRC Region I offices to discuss RG&E configuration management initiatives and program status. RG&E presented a schedule for the program extending through 1994 along with the resources needed to implement the program. The program is expected to be time consuming and labor intensive. Project commitments include: a Q-list in 1990, upgraded calibration procedures in 1990, upgraded maintenance procedures in 1992, and a probabilistic risk assessment (PRA) in 1992. Handouts from the management meeting are attached.

7. Administrative

7.1 Licensee Activities

At the start of the inspection period the plant was at approximately full power. On March 19, 1990, the coast down preceding the 1990 annual refueling outage began. Operators began shutting down the plant on March 23, 1990 at 9:00 a.m.. At 5:31 p.m., the main generator was taken off-line, and the turbine was overspeed trip tested

successfully at 5:35 p.m.. At 6:04 p.m., as an operator was inserting shutdown bank rods with the reactor subcritical, a reactor trip occurred due to high flux on source range detector N31. The source range detectors had automatically re-energized and N31 failed, causing the trip. At the close of the inspection period, maintenance personnel had not determined the root cause of the failure.

The plant is scheduled to be shut down for 37 days. Major outage activities include: annual refueling, 'B' reactor coolant pump replacement, steam generator tube plugging and sleeving, 'B' circulating water pump overhaul, midloop instrumentation upgrade, and a major valve preventive maintenance effort.

7.2 Licensee Responses to NRC Inspection Reports

The NRC received RG&E responses (1-31-90, 2-23-90) detailing corrective and preventive actions for the violation identified in Inspection Report 50-244/89-16 and for the continuing weakness identified in Inspection Report 50-244/89-15. These actions will be examined during future inspections.

7.3 Exit Meetings

At periodic intervals and at the conclusion of the inspection, meetings were held with senior station management to discuss the scope and findings of this inspection.

RG&E/NRC Meeting

March 6, 1990

Configuration Management

Introduction	Wilkens/Smith	10 min.
CM Program, Implementation & Status	Kennedy	20 min.
Schedule & Resources	Meier	15 min
Program Support	Piede	5 min
CM Information System		
Discussion	Open	

RG&E CONFIGURATION MANAGEMENT

REGION I PRESENTATION

MARCH 6, 1990

RG&E CONFIGURATION MANAGEMENT
RG&E/NRC MEETING - MARCH 6, 1990

INTRODUCTION	SMITH/WILKENS	10 MIN.
CM PROGRAM STATUS & IMPLEMENTATION	KENNEDY	20 MIN.
SCHEDULE & RESOURCES	MEIER/KENNEDY	15 MIN.
PROGRAM SUPPORT	PIEDE	5 MIN.
DISCUSSION	OPEN	

RG&E CONFIGURATION MANAGEMENT ORIGINS

- INDUSTRY EXPERIENCE
- SYMPTOMATIC PROBLEMS IDENTIFIED
  - Internal
  - INPO
  - NRC
- LIST OF MANY ISSUES - LIMITED RESOURCES
- RG&E ORGANIZATION & PEOPLE CHANGING
- LICENSE/LIFE EXTENSION

RG&E CONFIGURATION MANAGEMENT

NUCLEAR MISSIONS STATEMENT/GOALS

DEVELOPMENT OF DIVISION STRATEGIES

Configuration Management

Corrective Action Program

Engineering

Maintenance

Management Effectiveness

Materials Management

Procedures

Public/Personnel Safety

Quality Effectiveness

Region I Presentation - 3/6/90

RG&E CONFIGURATION MANAGEMENT
CM OVERSIGHT TASK FORCE

P. Wilkens (Chairman)	Engineering
J. Widay	Station Production
L. Phillips	Divisional Services
T. Marlow	Station Support
G. Meier	Training
C. Anderson	Quality Assurance
D. Piede	Production Systems & Servic
M. Shaw	Procurement
G. Wrobel	Nuclear Safety & Licensing

CM Project Manager M. Kennedy	Engineering

RG&E CONFIGURATION MANAGEMENT

INDUSTRY SURVEY

PSE&G
Davis-Besse
PGE - Region V Utilities
SCE

INPO
NUMARC

EXTERNAL SUPPORT

ATESI
ACT Associates
CYGNA

NUS
Gilbert/Commonwealth
IBM

CONCLUSION

Effective CM Implementation Approach is Organization Specific

RG&E CONFIGURATION MANAGEMENT
RG&E ASSESSMENT BY ATESI

RG&E vs. "INDUSTRY EXPERIENCE"

RECOMMENDATION SUMMARY

Establish Tighter Control for Configuration Changes

Enhance Availability Of Information

Consider More Formal Control on Safety Significant and Balance of Plant work Activities

Complete Walkdowns In-Progress to Establish Configuration Baseline

Focus QA to Resolve Programmatic Issues

RG&E CONFIGURATION MANAGEMENT

KEY ELEMENTS OF CONFIGURATION MANAGEMENT

- BASELINE CONFIGURATION
- DESIGN BASIS
- CONFIGURATION CHANGE CONTROL
- INFORMATION ACCESS

RG&E CONFIGURATION MANAGEMENT
PROGRAM ELEMENTS

BASELINE CONFIGURATION	P&ID Upgrade Electrical Drawing Upgrade Vendor Manual Project
DESIGN BASIS	DBD Project Setpoint Verification Project Safety Classification Project
CHANGE CONTROL	Work Control Improvements Procedure Updates By Projects
INFORMATION ACCESS	Document Control Improvement CM Information System

RG&E CONFIGURATION MANAGEMENT

CM OVERSIGHT TASK FORCE - Est. 1st QTR '89
- PROGRAM DIRECTION & OVERSIGHT

CM PROGRAM MANUAL

CM POLICY STATEMENT - Issued 2nd QTR '89
- POLICY: DEVELOP A COMPREHENSIVE INTEGRATED PROGRAM
- ORGANIZATION
- OBJECTIVES

CM PROGRAM PLAN - Issued 2nd QTR '89
- GOALS AND OBJECTIVES
- MANAGEMENT AND ORGANIZATION
- SCOPE

CM ACTION PLAN - Issued 3rd QTR '89
- TASK DESCRIPTIONS
- INTEGRATED SCHEDULE

RG&E CONFIGURATION MANAGEMENT
SCOPE SELECTION CRITERIA

SYSTEMS, STRUCTURES AND COMPONENTS

- SAFETY RELATED
- SAFETY SIGNIFICANT
- RELIABLE / ECONOMIC POWER GENERATION

LEVEL OF DETAIL

- MAINTENANCE REPAIR/REPLACE PRACTICES
- PROCUREMENT PRACTICES
- ENGINEERING DESIGN/ANALYSIS NEEDS

RG&E CONFIGURATION MANAGEMENT

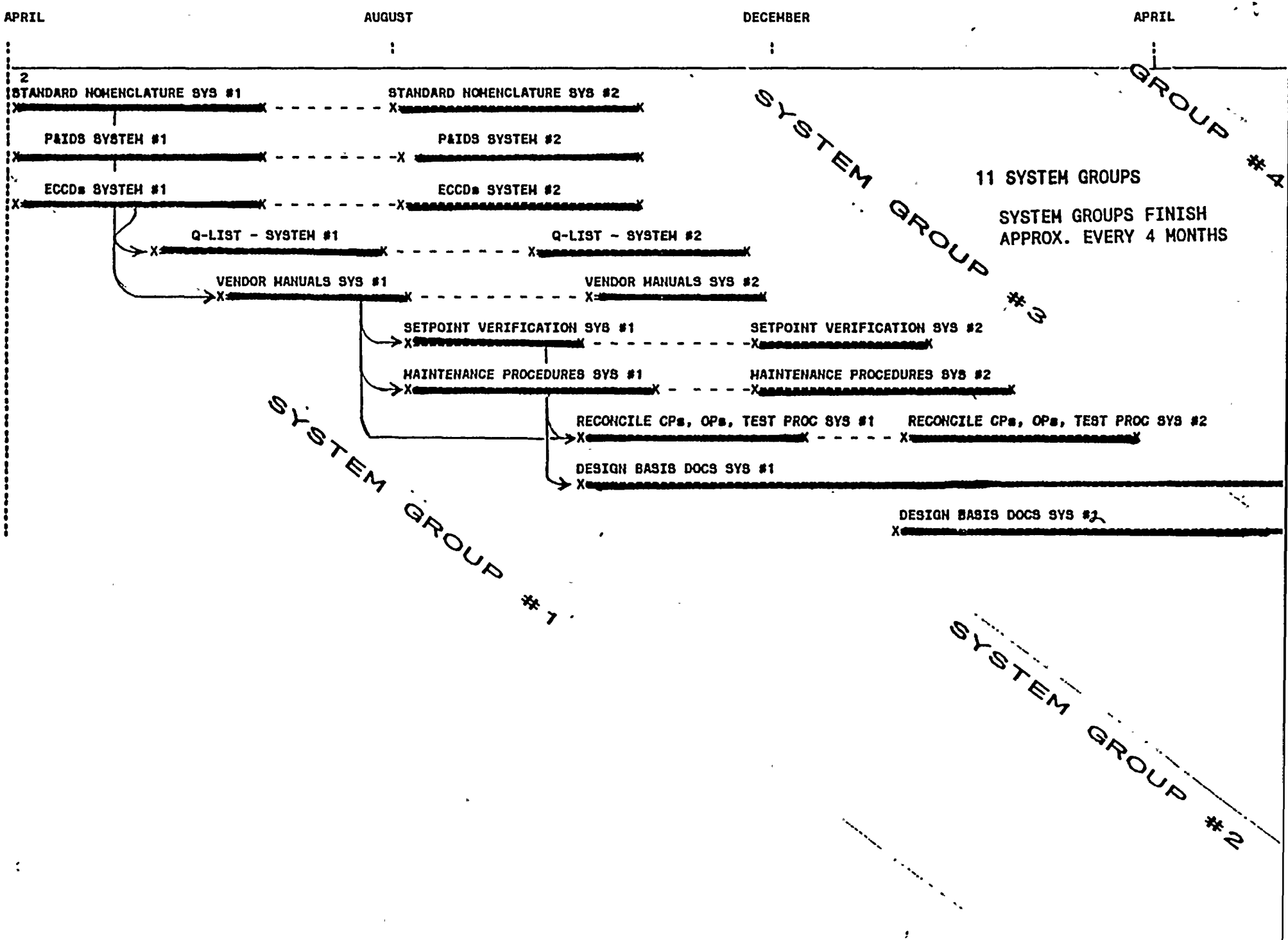
- PROGRAM CONSIDERATIONS
  - Data Integrity/Quality
  - Expedite Availibility of Output
  - RG&E (Hand-on) Management
  - Commitments
  - Budget Resources

- CONCLUSIONS
  - Integrate Projects
  - Develop Composite Schedule
  - Monitor/Control Schedule
  - Accountability

RG&E CONFIGURATION MANAGEMENT
PROJECT INTEGRATION & SUPPORT SEQUENCE

- STANDARD NAMES & ID NUMBERS
- AS-BUILT DATA
  - P&ID WALKDOWN
  - ELECTRICAL WALKDOWN
- SYSTEM FUNCTIONS & BOUNDARIES
  - Q-LIST
- DETAILED EQUIPMENT INFORMATION
  - VENDOR MANUALS
  - SETPOINT VERIFICATION
- PROCEDURES
- DESIGN BASES DOCUMENTATION
- RECONCILIATION

SIMPLIFIED SYSTEM SCHEDULE



RG&E CONFIGURATION MANAGEMENT SEQUENCE OF SYSTEMS

- SAFETY RELATED
- SAFETY SIGNIFICANT
- RELIABLE/ECONOMIC POWER GENERATION

RG&E CONFIGURATION MANAGEMENT
SYSTEM GROUPS 1 & 2

SYSTEM GROUP #1

Reactor Coolant System

Residual Heat Removal

Safety Injection System

Auxiliary Feedwater

Containment Spray System

SYSTEM GROUP #2

Reactor Protection System

Engineered Safety Features Actuation System

Chemical and Volume Control System

Service Water

Component Cooling Water

Primary Containment System

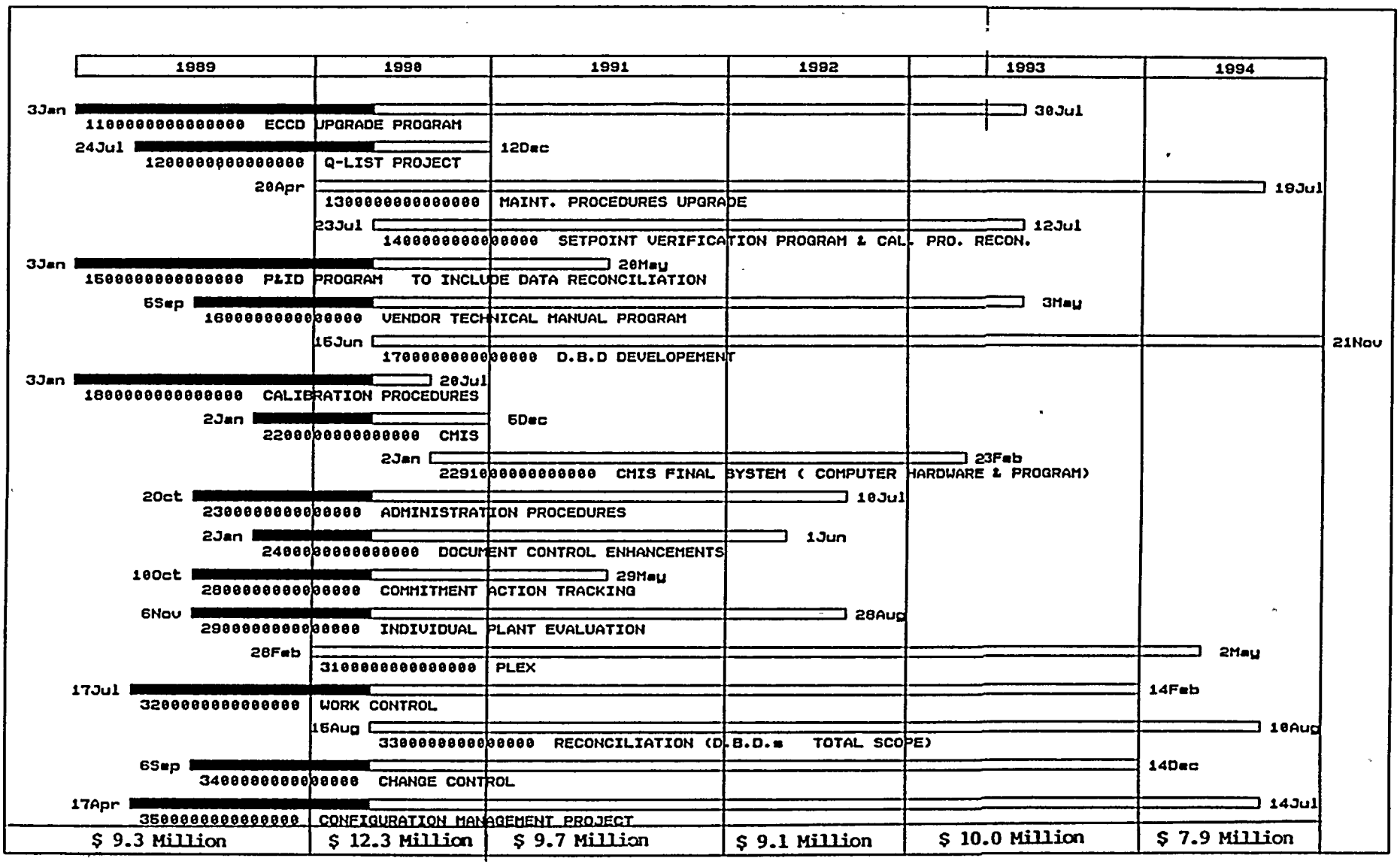
Steam Generator System

RG&E CONFIGURATION MANAGEMENT
PROGRAM CONTROLS & ACCOUNTABILITY

- SCHEDULE DEVELOPED
- ADVISE NRC OF SIGNIFICANT SCHEDULE CHANGES
- PROGRESS MEASURED BY DELIVERABLES
- QUALITY OF DELIVERABLES MONITORED BY PROJECT
- MONTHLY REPORT OF PROGRESS TO CM OVERSIGHT TASK FORCE BY PROJECT
- SCHEDULE MILESTONES WILL BE INTEGRATED INTO EMPLOYEE JOB PLANS

RG&E CONFIGURATION MANAGEMENT
LEVEL I SCHEDULE

Region I Presentation - 3/6/90



RG&E CONFIGURATION MANAGEMENT
INTEGRATED SCHEDULE IMPACT ON COMMITMENTS

PROJECT	COMMITMENT	IMPACT	COMMENTS
Q-List	08/90	None	
Maintenance Procedures	12/92	07/94	Safety Related and Safety Significant Done First
Calibration Procedures	07/90	None	Setpoint Verification Integrated with Other CM Projects
IPE/PRA	09/92	None	

RG&E CONFIGURATION MANAGEMENT
1990 ACTIVITIES

- Q-LIST
  System classification complete
  All Q components identified
  Process for continuing classification in place

- P&IDs
  Work off punchlist

- Electrical Drawing Upgrade
  Issue electrical system drawings necessary to support first two system groups

- Vendor Manual Project
  Complete inventory of manuals
  Control process improved
  Upgraded manuals for first two system groups

RG&E CONFIGURATION MANAGEMENT
1990 ACTIVITIES (CONT)

- Calibration Procedures (exclusive of setpoint verif.)
  Rewrite and upgrade complete
- Setpoint Verification
  Method developed, pilot project initiated
- Maintenance Procedure Upgrade
  Pilot project complete
- Schedule
  Integrated systems approach implemented and updated

CMIS

CONFIGURATION MANAGEMENT INFORMATION SYSTEM

DUANE L. PIEDE, MANAGER,
PRODUCTION SYSTEMS AND SERVICES

PROJECT PURPOSE

CMIS

TO PROVIDE AN EFFECTIVE, INTEGRATED INFORMATION SYSTEM TO SUPPORT THE ENHANCED CONFIGURATION MANAGEMENT PROCESSES OF THE NUCLEAR DIVISION.

PROJECT SCOPE

CMIS

ALL INFORMATION CREATED OR USED IN THE VARIOUS CONFIGURATION MANAGEMENT PROCESSES ARE POTENTIALLY WITHIN THE SCOPE OF CMIS. THOSE PORTIONS OF CM INFORMATION WHICH WILL BE INCLUDED IN A COMPUTER-BASED INFORMATION SYSTEM WILL BE DETERMINED BASED ON THEIR SHARABILITY, CRITICALITY, AND ECONOMIC BENEFITS.

CM FUNCTIONAL AREAS

CMIS RELATIONSHIP TO CM

- ENGINEERING DESIGN BASIS
- ACTUAL PLANT CONFIGURATION
- PROCEDURAL AND PROCESS CONTROLS
- INFORMATION SYSTEM

"AS-IS" VS. "TO-BE"

CMIS

"AS-IS"	"TO-BE"
INFORMAL CONTROLS	FORMAL CONTROLS
GROUP-LEVEL CONTROLS	DIVISION-LEVEL CONTROLS
MANUAL METHODS	AUTOMATED APPROACH
LIMITED AUTOMATION	EXTENSIVE AUTOMATION
POCKETS OF DATA	SHARED DATABASE
DUPLICATED INFORMATION	INTEGRATED INFORMATION
PAPER-BASED	ON-LINE ACCESS

DESIGN PRINCIPLES

CMIS

- MAXIMUM USER PARTICIPATION IN DEVELOPMENT AND TESTING
- TRANSPARENT COMPUTER ENVIRONMENT
- COMMON LOOK AND FEEL TO USERS
- LOGICAL, INTEGRATED, RELATIONAL DATABASE
- PC-LIKE RESPONSE
- HIGH DATA INTEGRITY
- ACCESS SECURITY
- SOFTWARE QUALITY ASSURANCE BUILT-IN

IMPLEMENTATION APPROACH

CMIS

- FORMATION OF CMIS PROJECT TEAM
- BUSINESS PROCESS MODELING
- HARDWARE AND SOFTWARE STANDARDS
- INTEGRATION OF ONGOING CM PROJECT DATA

CMIS TEAM COMPOSITION

12–MEMBERS REPRESENTING:

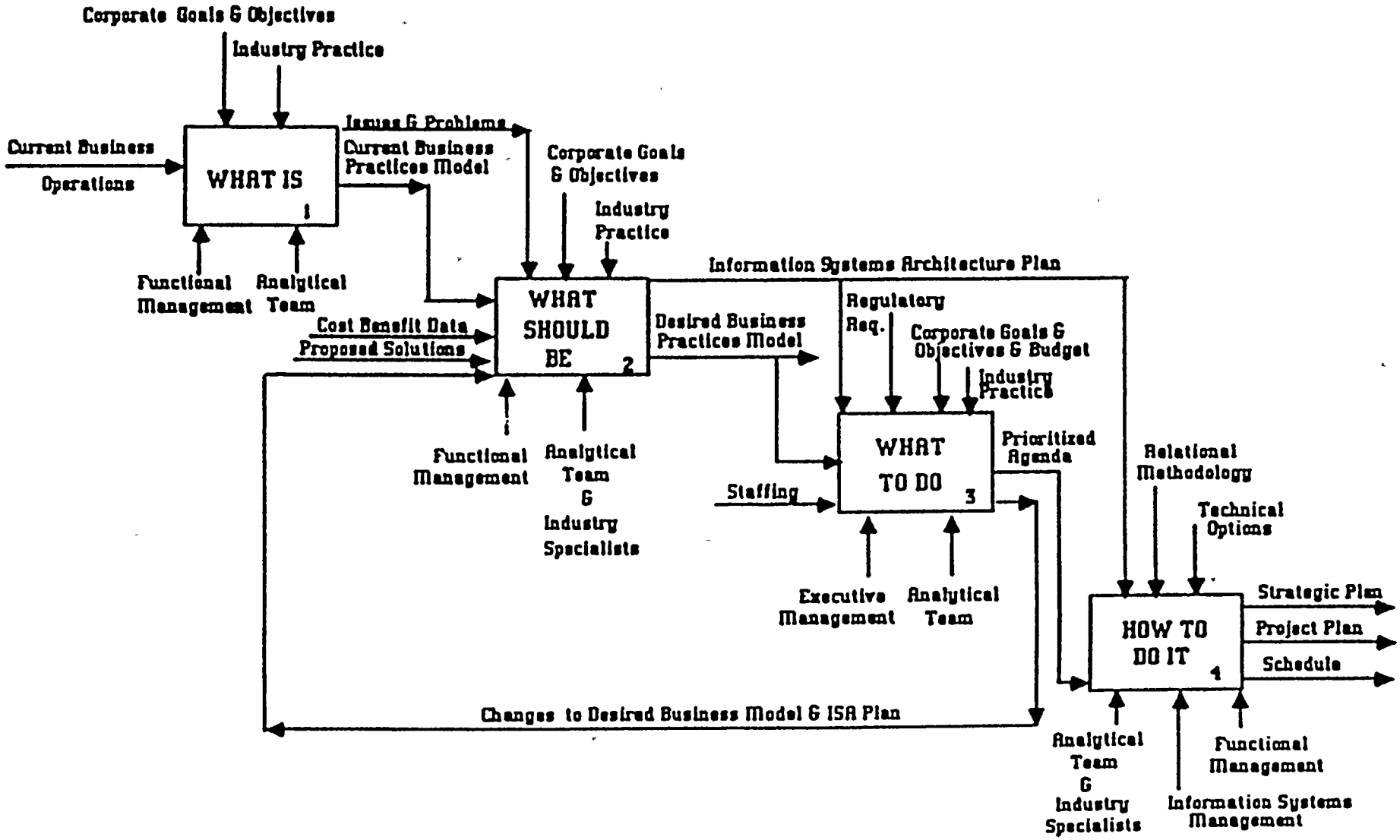
- –ENGINEERING
- –PLANT
- –MATERIALS MANAGEMENT
- –CORPORATE INFORMATION SYSTEMS
- –DIVISION SYSTEMS AND SERVICES
- –QUALITY ASSURANCE
- –CM PROJECT
- –TRAINING

BUSINESS PROCESS MODELING

BASIC ELEMENTS OF:

1. WHAT IS?
2. WHAT SHOULD BE?
3. WHAT TO DO?
4. HOW TO DO IT?

BUSINESS MODELING



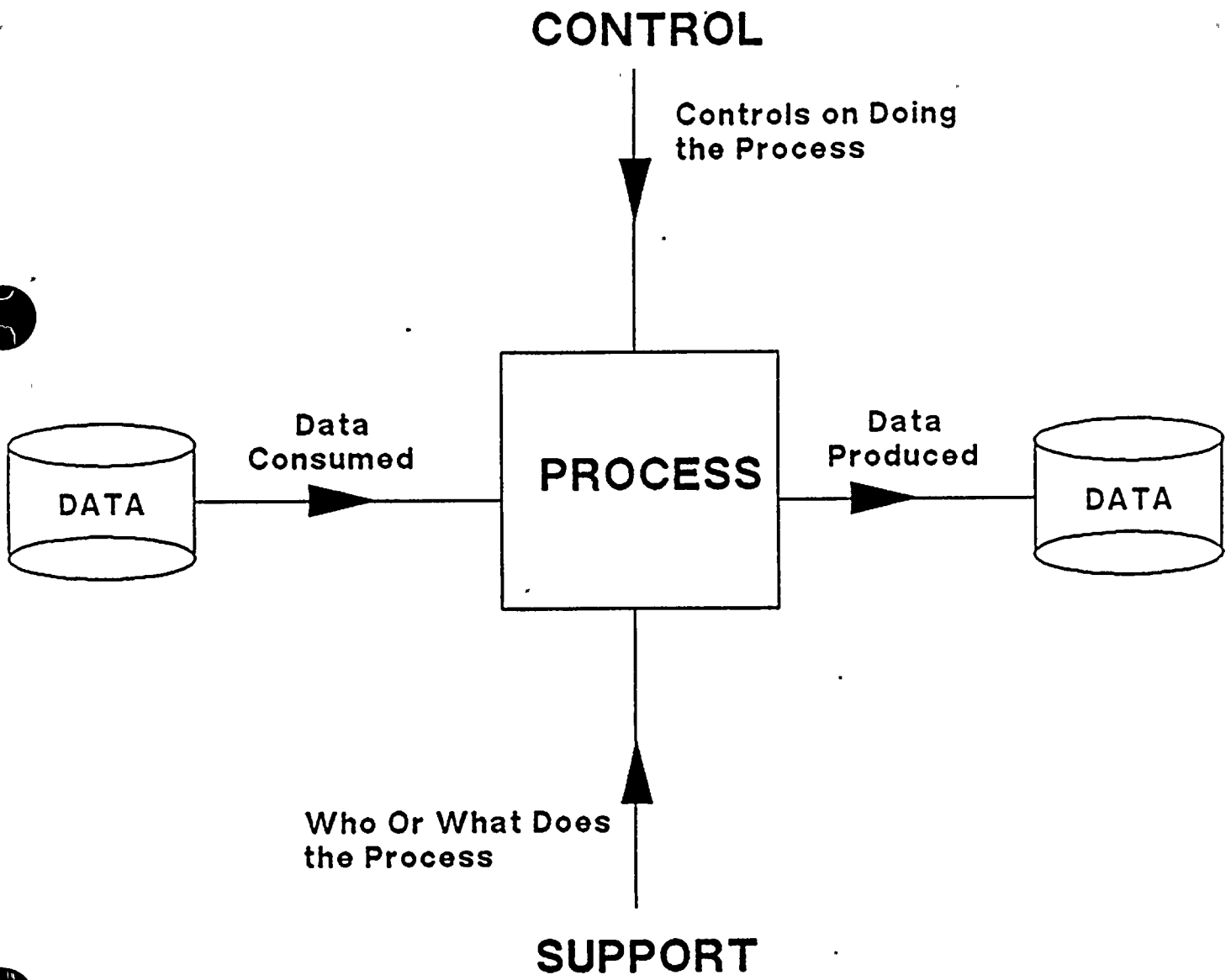
4-DIMENSIONAL PROCESS MODEL

BASIC BUILDING BLOCK

1. DATA INPUTS
2. DATA OUTPUTS
3. CONTROLS
4. SUPPORTS

4-DIMENSIONAL PROCESS MODELS ARE:

1. INTUITIVELY UNDERSTANDABLE
   (USER OWNS THE MODEL'S CONTENTS)
2. COMPLETE
3. TRANSFORMABLE



CMIS SCHEDULE

PHASE 0	DEFINITION & PLNG	4Q89 - 1Q90
PHASE 1	INTERIM SYSTEM	4Q90 (MEL)
PHASE 2	CORE SYSTEM	4Q91
PHASE 3	PROJECT INTEGRATION	4Q93

QUESTIONS ??