Nebraska Public Power District

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NLS970063
April 9, 1997

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Engineering Performance Improvements
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Reference:
1. Letter to G. R. Horn (NPPD) from L. J. Callan (USNRC) dated February 14, 1997, "Systematic Assessment of Licensee Performance (SALP) Report 50-298/97-99"

2. Letter to USNRC from P. D. Graham (NPPD) dated March 19, 1997, "Response to Systematic Assessment of Licensee Performance (SALP) Report, NRC Inspection Report No. 50-298/97-99, Cooper Nuclear Station, NRC Docket 50-298, DPR-46"

NRC Inspection Report 50-298/97-99 (Reference 1) provided the NRC's assessment of safety performance at Cooper Nuclear Station (CNS) for the period of July 9, 1995 through January 11, 1997. In the response dated March 19, 1997 (Reference 2), the Nebraska Public Power District (District) committed to provide a follow up response with additional details regarding performance in the engineering category as well as plans for continued improvement. This letter, including attachments, provides this additional information.

While improvements have been made in Engineering performance, the District acknowledges that prior progress has not met our expectations. To achieve a higher rate of improvement, ten additional permanent engineering positions have recently been authorized and are currently in the process of being filled.

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As stated in the District's response to the SALP Report, the CNS management team and staff are confident in our ability to improve the station's performance, and reach increased levels of safety margin necessary for long term station operation. We maintain this level of confidence and look forward to the opportunity to further discuss with the Staff our plans for improved performance and the results achieved.

Sincerely,

P D Graham

P. D. Graham
Vice President - Nuclear

/crm
Attachments

cc: Regional Administrator
USNRC - Region IV

Senior Project Manager
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector
USNRC

NPG Distribution

**COOPER NUCLEAR STATION**
**STRATEGY FOR IMPROVED PERFORMANCE**
**IN THE ENGINEERING CATEGORY**

In the District's response to the SALP Report[1], four primary areas of focus were identified. These areas were: System Engineering Performance; Design Basis and Configuration Control; Roles, Responsibilities, and Expectations; and Corrective Actions. Additional details of performance and plans for continued improvement in each of these areas are provided below.

System Engineering Performance

As noted in the previous response, the District has identified three key actions necessary to continue to improve System Engineering's ability to respond both proactively and reactively to plant needs. These actions are repeated below with additional details on how they will be achieved and progress to date.

i) Implementation of a New Data Collection and Display Software - In 1996, we began a long term computer improvement program focused on enhancing our system performance monitoring and trending capabilities. As a result, a new "Performa" software was purchased and is currently being installed as part of the Performance Monitoring and Trending Improvement Program. This upgrade will facilitate the collection and display of key plant information and process data required by the system engineer to proactively assess system health. The objective of this improvement is to transform the system engineer from a data collector to a data evaluator. Information from the corrective action program, station modification process, Work Item Tracking, Plant Performance Indicators, and selected financial reports will be searchable and displayed as needed. The capability to easily collect and display plant process data is a major part of this upgrade. For example, the software will provide easy access to the System Engineering Trends Program which includes data from the plant's process computer (PMIS) and the Surveillance Testing Program. The System Engineering Trends Program currently contains a large number of quarterly system performance trends with access to over 8000 existing data points. Data collection and display of equipment vibration and oil analysis data will also be easily accessible from this upgrade. Completion of the Performa software installation is scheduled for July of this year. (Attachment 2 provides a project schedule showing the actions completed and status of those remaining.) The effectiveness of this improvement project will be reviewed shortly following completion.

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[1] Letter to USNRC from P. D. Graham (NPPD) dated March 19, 1997, "Response to Systematic Assessment of Licensee Performance (SALP) Report, NRC Inspection Report No. 50-298/97-99, Cooper Nuclear Station, NRC Docket 50-298, DPR-46"

Until the upgrade is completed, the current trending program continues to be used with many examples of success. For example:

- Following review by the system engineer of the results of the surveillance testing of Automatic Depressurization System Low-Low Set Pressure Permissive pressure switch, it was recognized that the pressure switch as-found setpoint was nearly outside of the instrument limit. The system engineer developed trending of the as-found setpoint and identified an adverse trend in the setpoint drift on this pressure switch, used this trend information to predict the expected instrument drift during the next surveillance interval, and established the appropriate priority for replacement of the pressure switch.

- The maintenance engineers were noting increasing vibration on both the Reactor Equipment Cooling Pumps C and D and were not certain which pump should be assigned the highest priority for repair. The system engineer used trend data to predict the performance of the two pumps and assist Maintenance in prioritizing the repair of the two pumps, resulting in neither pump entering an IST alert for vibration.

- As a result of continuously monitoring and trending the wear rate of the Reactor Recirculation Motor Generator (RRMG) brushes, the system engineer was able to demonstrate there was sufficient remaining brush life to avoid needlessly cycling the plant prior to the refueling outage.

- Through good monitoring and communications with Operations during the recent high river level conditions, the system engineer provided an accurate and thorough analysis of the expected river levels. Based on plant and government resources (obtained through the Internet), appropriate precautions were taken to maintain the plant in a safe condition.

While the new data collection and display software will enhance the ability of the system engineers to assess equipment health, the examples above show that equipment monitoring and trending is already being used effectively to improve plant performance.

2) System Engineering Performance Indicators - There are currently a significant number of operational performance indicators used at CNS to monitor system health. Because of the day-to-day involvement of the system engineers with plant operation, many of these indicators reflect a direct correlation to System Engineering performance. Some of the more important indicators, and a brief analysis of our current performance, is provided below. (The associated trend graphs are provided as Attachment 3.)

Emergency AC Power System - The current CNS three year average unavailability is approximately 0.5% (which is significantly better than the industry average of approximately 1.1% unavailability and the industry goal of 2.0% unavailability) and

continues to improve. Modifications to be implemented during the current refueling outage will further improve current performance and eliminate known design problems with the fuel delivery system.

Residual Heat Removal System - The current CNS three year average unavailability is approximately 0.7% (which is better than the industry average of 0.75% and significantly better than the industry goal of 2.0% unavailability) and remains fairly steady.

High Pressure Injection Systems - The current CNS three year average unavailability is approximately 1.9% (which is slightly above the industry average of 1.75% and slightly below the industry goal of 2.0% unavailability) and is trending down. Outage maintenance and planned enhancements will result in sustained improvement.

Performance goals for the above system indicators were selected to ensure that an adequate margin to the 2.5% unavailability assumption in the CNS Probabilistic Safety Assessment (PSA) is maintained.

Mean Core Damage Frequency - This performance measure, new in 1997, indicates the overall reliability and availability of systems, structures, and components important to safety as established under the Maintenance Rule Program. Our current performance of less than 1.2E-05 mean Core Damage Frequency is well below our risk significance threshold of 1.8E-05 and is below our current 1.43E-05 estimated mean Core Damage Frequency used in the PSA.

Maintenance Rule Effectiveness - This performance measure, also new in 1997, indicates the effectiveness of our System Engineers in limiting the total number of Maintenance Rule items. For purposes of this performance indicator, a Maintenance Rule item is defined as any failure to meet a performance goal or any programmatic failure (e.g., a significant condition adverse to quality or a condition leading to an NRC citation). Our goal of less than or equal to 9 items in 1997 reflects an expected improvement in our current performance of 11 items. Based on current trends and actions planned, we expect to meet this goal.

One of the significant impediments to improving System Engineering performance identified as a result of the Engineering Self Assessment was the incomplete status of training for system engineers. The performance indicator below provides our status in this area.

Qualification of System Engineers - The matrix provided in Attachment 4 shows the current qualification status of our system engineers. The shaded blocks indicate qualifications that have been completed since our Engineering Support Training Program was placed on probation. Thirteen of eighteen System Engineers are fully qualified at this

time. This training has improved the questioning attitude of our engineers and sensitized them to the importance of properly maintaining our design basis. Engineering has made very significant progress in this area.

3) System Engineering Enhanced Problem Solving Skills - We have recognized the need to provide additional problem solving skills for our system engineers. To accomplish this, training will be provided focusing on techniques which prevent recurrence rather than just improving our ability to solve the apparent problem at an early stage. We expect to identify the appropriate training by May 1, 1997, and to conduct this training between May and September 1997. Engineering management will continue to assess improvements in problem solving skills and provide additional focus where required.

To further assist us in evaluating the status of our System Engineering program, we conducted a two day independent assessment of our performance. This assessment was performed by two system engineers and a system engineering supervisor, each from a different nuclear facility. This assessment provided valuable insights into the status of our System Engineering program and a productive exchange of good ideas among the stations participating. The assessment confirmed that the CNS System Engineering program is fulfilling a key role in the operation of CNS and that many of the challenges we face are likewise being faced by other system engineering organizations.

In summary, substantial progress has been made towards improving our System Engineering performance. Our performance indicators show positive trends. The qualifications of our System Engineers have been significantly improved and remaining training is being accomplished on schedule. Our new Performance Monitoring and Trending program is proceeding towards scheduled implementation in July 1997, and we will have enhanced our system engineers' problem solving skills by September 1997. Sustained improvement will be achieved through new initiatives and programs such as the system expert program (currently under development) and procedural reviews to identify areas for additional improvement.

Design Basis and Configuration Control

As noted in the March 19, 1997, SALP response, significant progress has been made in the area of Design Basis and Configuration Control. While the most significant improvements in these areas were discussed in the aforementioned response, the areas discussed were by no means a complete listing of the improvements accomplished over the SALP period. Attachment 5 provides a more complete list of the Design Basis and Configuration Control improvements made during this period. To illustrate this progress by way of example, Attachment 5 also includes two performance indicators. The first performance indicator, DCD Development, shows our progress in creating and issuing Design Criteria Documents (DCDs) over the course of the SALP period.

The second performance indicator included in Attachment 5 shows our significantly improved ability to prepare RE17 Modification Packages prior to outage start.

The previous response also identified projects underway to continue the significant improvements already achieved. Our progress and plans for each of these items are provided below.

1) Improved Technical Specifications (ITS) - On March 27, 1997, our proposed ITS was submitted to the NRC. With this significant milestone completed, our focus has shifted to supporting the Staff review and approval, and implementation of ITS. The implementation schedule is provided as Attachment 6. This schedule will be closely monitored and resources allocated to ensure we are fully prepared to implement ITS by April 1, 1998.

2) Engineering Backlog Reduction - We have hired a consultant company to assist in this effort. Since its inception almost a year ago, this backlog reduction effort has remained on schedule and continues to progress according to our expectations (see Attachment 7). This project has resulted in the closure of Component Evaluation Packages, Drawing Change Notices, Nuclear Action Item Tracking items, and Design Change Completion Reports. As indicated on Attachment 7, approximately 1300 of the original 1700 backlog items have been completed in support of the planned August 1997 completion of this effort. Resources continue to be devoted to this effort during our current refueling outage.

3) Updated Safety Analysis Report (USAR) Rebaselining - This project was described in a March 31, 1997, submittal[2] and will not be repeated here. Suffice it to say, we are very pleased to be proceeding with this project and anticipate that the execution of this project, as well as the completed product, will bring significant benefits to our Engineering organization (as well as to CNS as a whole) by completing the rebaselining of our engineering infrastructure. We look forward to detailed discussions with you on this project in the near future.

4) Potential Unauthorized Modifications - This project involves screening and/or review of historical documents for potential unauthorized modifications. In addition, any potential unauthorized modifications identified will be addressed. As shown in Attachment 8, our review of historical documents is proceeding ahead of schedule and will result in completion of this review by the end of 1997.

   As of the start of 1997, we had approximately 500 potential unauthorized modifications identified. Accordingly, we established a goal (also shown in Attachment 8) to resolve at least

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[2] Letter to USNRC from P. D. Graham (NPPD) dated March 31, 1997, "USAR Rebaselining Project Description, Cooper Nuclear Station, NRC Docket 50-298, DPR-46"

400 potential unauthorized modifications by the end of 1997. As shown on this attachment, our year-to-date progress exceeds our goal. As of the end of March, we planned to resolve 120 potentially unauthorized modifications and actually resolved approximately 150.

In general, these potential unauthorized modifications are minor enhancements to non-essential structures, systems, and components to improve plant operation (e.g., addition of valves to radwaste system, addition of gaitronics stations, modifications to valve packing, addition of hose fittings, etc.). To date, none of these identified potential unauthorized modifications have been safety significant or resulted in an unreviewed safety question. Each identified potential unauthorized modification is documented on a Problem Identification Report (PIR), and screened for operability, reportability, and safety effects, before being added to the backlog for resolution.

In addition to these, other areas related to Design Basis and Configuration Control that Engineering Management is focusing on include:

1) Engineering Document Reduction - The total number of open engineering documents (Drawing Change Notices, Engineering Work/Project Requests, Classification Evaluation Packages, Modification Completion Reports) has been of concern to CNS. In addition to the Engineering Backlog Reduction and Potential Unauthorized Modification efforts mentioned above, we are allocating resources to significantly reduce the number of open documents in process within Engineering. As shown on Attachment 9, we started 1997 with approximately 2200 open items. Our goal is to reduce this to less than 750 items by year's end. Our first quarter performance was slightly below our expectations. While the number of open engineering documents generated during our refueling outage will challenge us, we expect to reach our year end goal through process improvements and by maintaining additional resources in the time period immediately following the outage.

2) Configuration Control - There have been many improvements made in this area over the course of the prior SALP period as previously shown in Attachment 5. However, there are a number of improvements from our Phase III Plan on Design Basis and Configuration Control that will be carried forward into our Business Plan. Some of these include improving the availability and accessability of design and licensing basis information, improving the update cycle of drawings, and the completion of design criteria documents currently in development. Of particular importance is the establishment of performance measures for this area and an assessment of the effectiveness of our prior improvements. Work on this area will commence after the outage.

3) Engineering Processes and Procedures - There have been many improvements made in this area over the course of the prior SALP period. We were able to completely revise the modification process, drawing change process, classification evaluation package procedure,

and replacement component evaluation procedure. Also, we were able to revise numerous maintenance procedures to better interface with the modification process and prevent new unauthorized modifications. In addition, we were able to institute the new engineering evaluation process. This new process allows for non-conformance disposition types such as use-as-is, repair, rework, scrap, etc. Our process improvement efforts will resume following the outage and each Engineering Department has established performance goals to improve several of their key processes by the end of 1997. A performance indicator will be created to monitor our success in this area both in terms of the number of processes improved and the effectiveness of the improvements.

Our overall assessment of our performance in the Design Basis and Configuration Control area is, that while substantial progress has been made, further improvements are needed. While some of these additional improvements will be completed by the end of the year (e.g., Engineering document reduction, backlog reduction, and configuration control process improvements), others such as the USAR Rebaselining and the resolution of Potential Unauthorized Modifications will extend into next year.

Roles, Responsibilities, and Expectations

As noted in the previous response, there has been significant management attention directed to defining roles, responsibilities, and expectations in Engineering performance. With respect to the Engineering Action Plans 01.A, Roles and Responsibilities, and 01.B, Standards and Expectations, these plans are scheduled for completion, assessment of effectiveness, and generation of closure documentation by June 1997.

The training and development of our Engineering staff plays an important role in implementing our responsibilities and achieving our expectations. In the training area, we are very pleased with our progress and with the reaccreditation of our Engineering Support Training Program. Completion of the task specific qualification guides and completion of substantial additional task qualifications by our people (see Attachment 10) contributed strongly to reaccreditation of our program. Further, our engineers and supervisors have taken strong responsibility and ownership for training, including taking the initiative to conduct a long range planning session for Engineering Support Training.

Engineering has been key in the upgrading of the existing 50.59 training. This upgrade includes newly developed licensing basis training and CNS specific codes and standards training. The training was developed using the operations training course for transients and accidents.

This enhanced training focus has resulted in improvement of both position specific initial training and the general continuing training. The next focus engineering has started is to

develop and expand the position specific continuing training. One example of advances in this area is the GE Setpoint Methodology training provided to the entire Design Engineering I&C and Electrical Groups, as well as selected System Engineering personnel. Another example is the maintenance rule training provided to the system engineers.

Development of our supervisors and managers is receiving additional attention. In our Design Engineering Department we have brought in an experienced senior manager, on an interim basis, to assist with management development, and coaching and mentoring of our supervisory personnel. Individual developmental plans are being created by our supervisors and managers for approval by their managers. Implementation of these plans and assessments of effectiveness are part of our performance review process at the end of this year.

Performance standards have been raised in Engineering with positive results achieved. In particular, responsiveness to the plant's needs and to addressing concerns of the NRC have improved significantly. Performance standards have recently been raised in several areas such as procedural compliance, safety focus/conservative decision making and in the area of implementation of our Corrective Action Program. Follow-up on the effectiveness of these actions and consideration of the need for additional actions is in progress.

There are many recent examples of improvements already observed in the questioning attitude, safety focus, procedural adherence and conservative decision making in Engineering. Examples include:

- The decision to move forward with the installation of the Torus Suction Strainer Modification during the current refueling outage despite the existing ambiguity in the requirements because Engineering determined it to be the right thing to do.

- The conservative and safety focused efforts taken by the system engineers when a stem failed on one of the cascading drains for the feedwater heaters. The system engineers worked around the clock to bound the condition and ensure that this, and other potential conditions, were addressed by the reload analysis.

- The challenge of the acceptability of a recent Technical Specification Interpretation which allowed Secondary Containment to be tested outside the 2 to 5 mile per hour wind speed based on an analytical evaluation. Conservative measures were taken to independently review this decision, and verify with the industry and the Staff that this was acceptable.

- The conservative decision demonstrated during efforts to extend the time between replacements of the soft seats in the feedwater check valves, using operating experience and industry and vendor benchmarking.

- The proactive undertaking of a study of the adequacy of the Electrical Distribution System, using newly acquired analytical tools, to validate the current margin and make needed improvements.

Corrective Action

As noted in the March 19, 1997, SALP response, management began last November to focus attention on those things most important for Engineering to do well. This resulted in a corrective action plan identified as the "Must Do" list. As mentioned previously in this letter, with the reaccreditation of our Engineering Support Training Program, the top item on this list has been completed, adding to the items stated as completed in the previous response. The specific status of most of the items on this list is covered elsewhere in this letter and will not be repeated here. Attachment 11 provides the original November 1996 and April 1997 versions of our "Must Do" list. Comparing these two lists, and the status provided in this letter for those items that remain on the list, provides a clear picture of the significant progress made in Engineering in the last four months. The April 1997 version of the list includes two new items: the USAR Rebaseline and RE17 Lessons Learned.

CNS Management has written a Problem Identification Report, which was categorized as a Significant Condition Adverse to Quality under our Corrective Action Program, to evaluate our ability to implement effective corrective action. A high level team will conduct a formal investigation of this aspect of issue management and will perform a root cause evaluation for any deficiencies identified. Permanent corrective actions will be developed as determined by the investigation. In the mean time, senior management has instituted interim actions to ensure that:

1) Root cause investigations are rigorous,
2) Corrective actions to prevent recurrence have been appropriately identified, and
3) Appropriate follow-up effectiveness reviews have been planned such that timely adjustments will be made if needed.

These interim actions include back-end reviews of root cause investigations, adequacy of proposed corrective actions and effectiveness of corrective actions. Further, these interim actions will include direct oversight by the CNS senior managers.

Following the Engineering Self Assessment in 1996, thirty-six Engineering Action Plans were developed to address the major findings and to integrate other actions requiring Engineering resources, such as outage preparations and backlog reduction. As shown in Attachment 12, approximately twenty-one of the thirty-six plans are expected to be closed by mid-1997. The remaining 15 plans will be reprioritized and scheduled after the outage based on their priority. In addition, key alignment goals will be established and integrated into the Nuclear Power Group Business Plan currently under development.

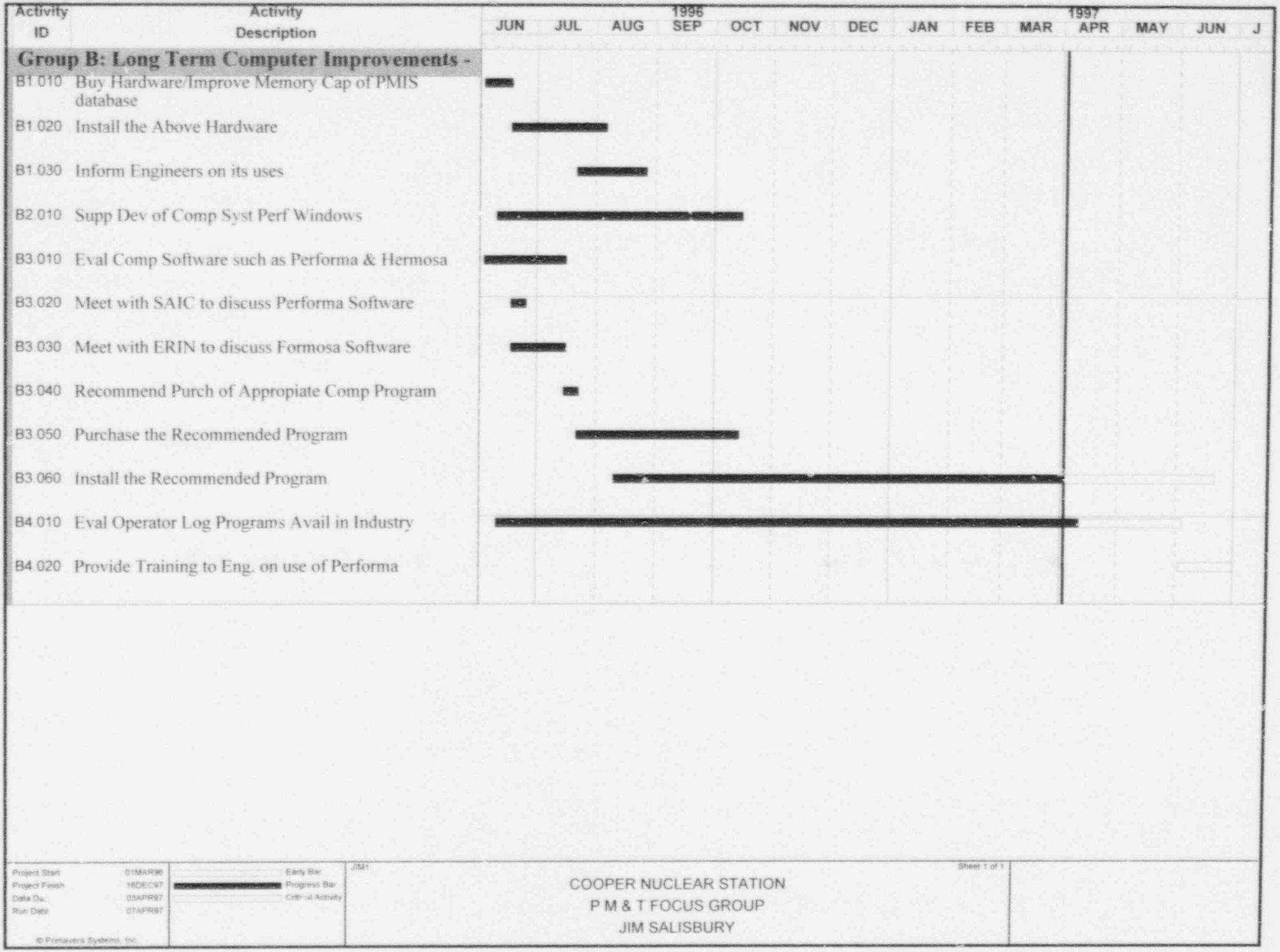
Summary

In summary, we feel our Engineering organization has made significant progress. Performance indicators show many areas with acceptable performance. Our progress on projects to improve performance is being tracked and demonstrates steady progress. We will continue to monitor, revise and refine these performance indicators to ensure they reflect the important aspects of Engineering performance. We are actively managing our priorities and being rigorous about closure of our Engineering Action Plans.

Lastly, we are committed to continue to improve. We are undertaking projects that will provide for this improvement and we are providing performance indicators that will demonstrate how effective we are at making those improvements.

# ATTACHMENT 2

- **Performance Monitoring and Trending Improvement Program (Performa Software Implementation Project)**


Activity ID
Activity Description
1996
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1997
JAN
FEB
MAR
APR
MAY
JUN
J
Group B: Long Term Computer Improvements -
B1.010 Buy Hardware/Improve Memory Cap of PMIS database
B1.020 Install the Above Hardware
B1.030 Inform Engineers on its uses
B2.010 Supp Dev of Comp Syst Perf Windows
B3.010 Eval Comp Software such as Performa & Hermosa
B3.020 Meet with SAIC to discuss Performa Software
B3.030 Meet with ERIN to discuss Formosa Software
B3.040 Recommend Purch of Appropiate Comp Program
B3.050 Purchase the Recommended Program
B3.060 Install the Recommended Program
B4.010 Eval Operator Log Programs Avail in Industry
B4.020 Provide Training to Eng. on use of Performa
Project Start 01MAR96
Project Finish 16DEC97
Data Da. 03APR97
Run Date 07APR97
© Primavera Systems, Inc.
Early Bar
Progress Bar
Critical Activity
JIM1
Sheet 1 of 1
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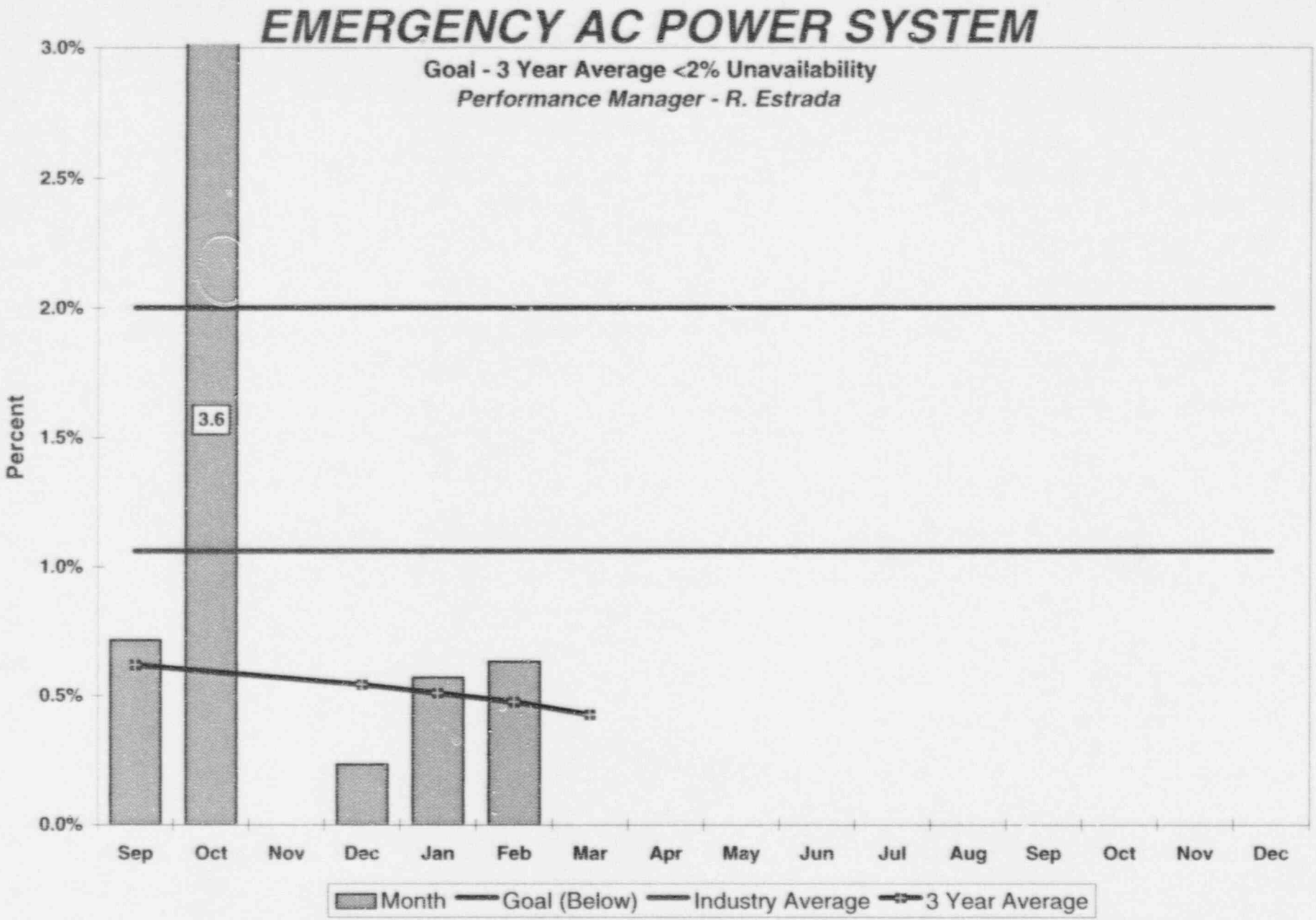
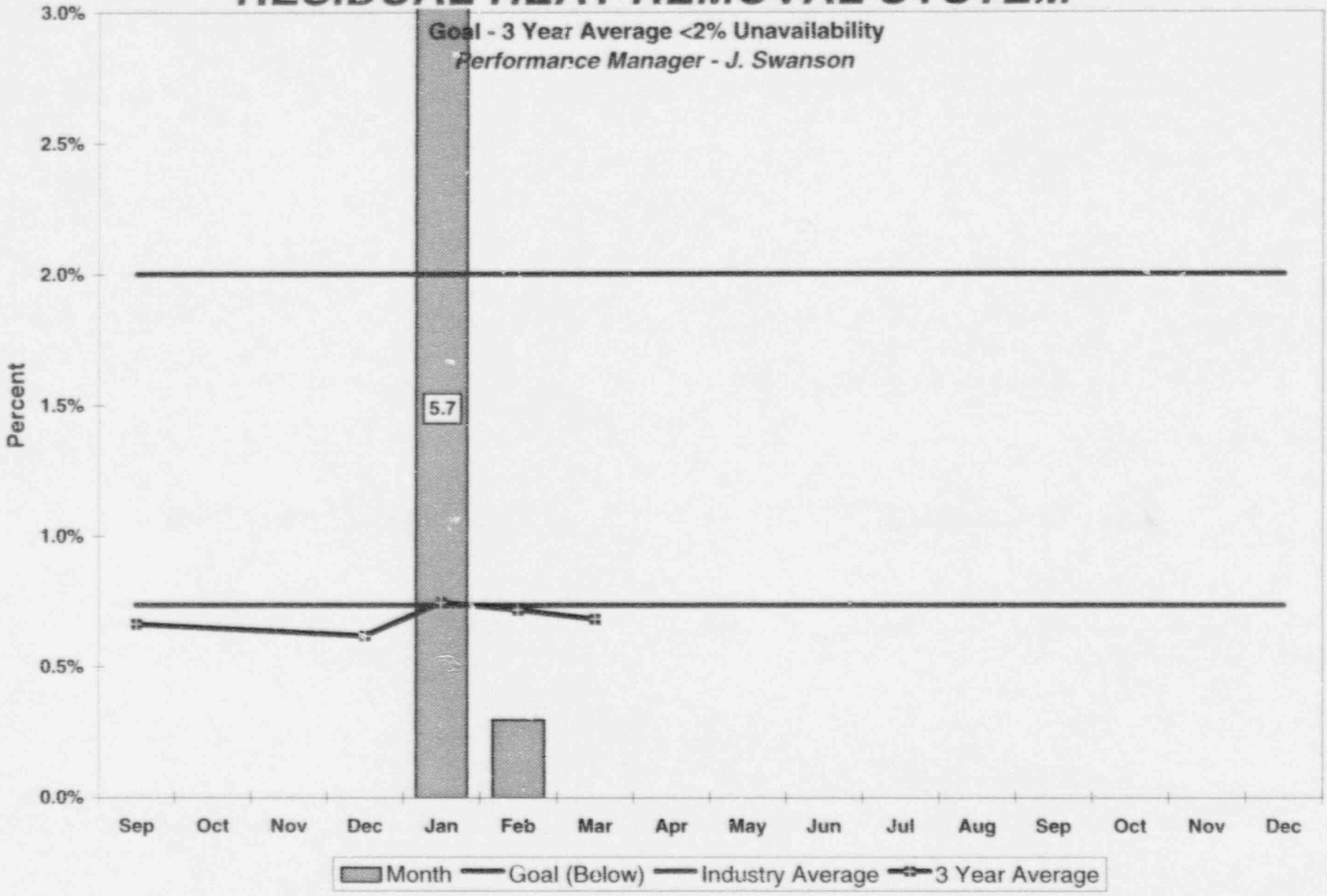
P M & T FOCUS GROUP
JIM SALISBURY

# ATTACHMENT 3

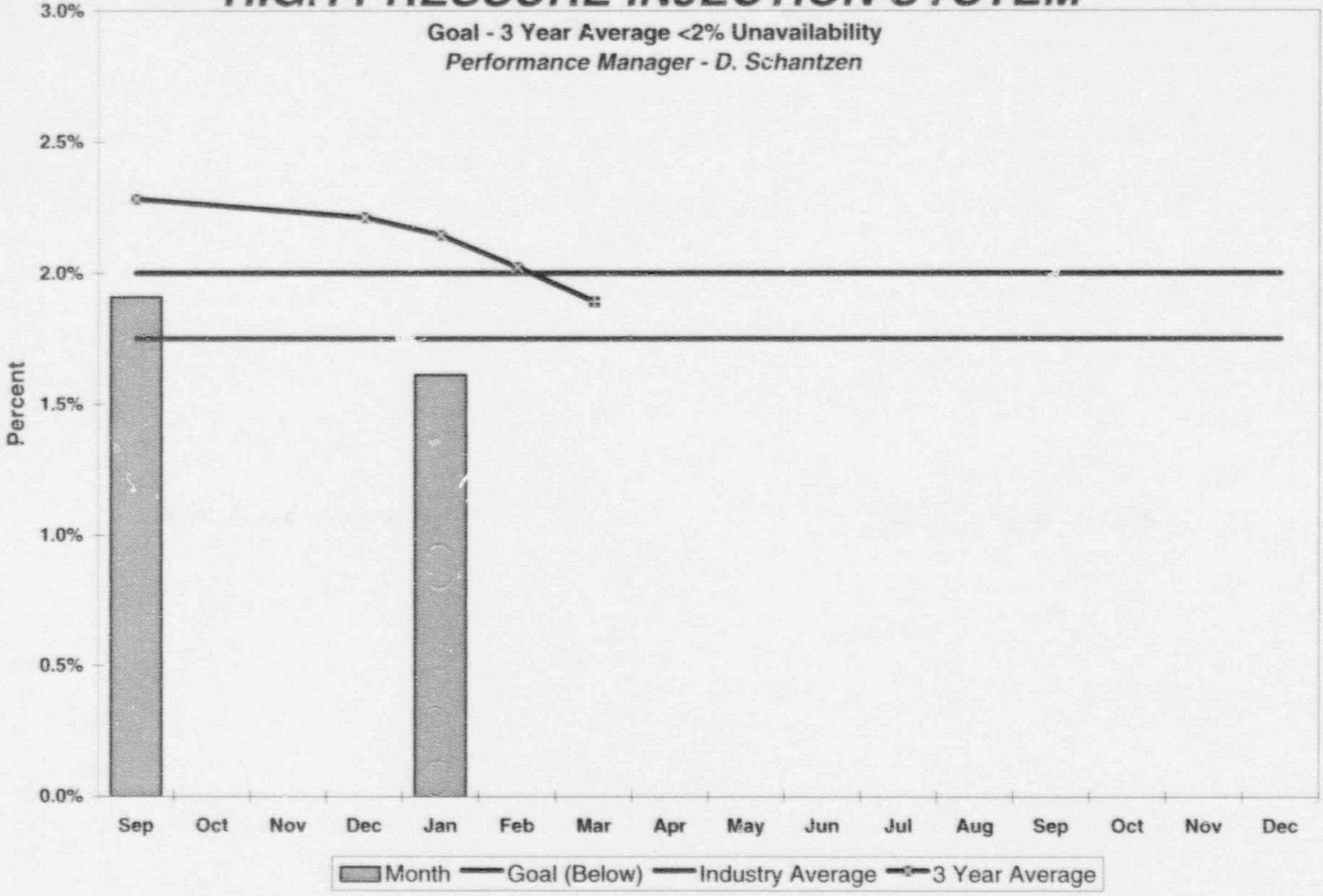
- **Performance Indicator: Emergency AC Power System**
- **Performance Indicator: Residual Heat Removal System**
- **Performance Indicator: High Pressure Injection System**
- **Performance Indicator: Mean Core Damage Frequency**
- **Maintenance Rule Effectiveness**


EMERGENCY AC POWER SYSTEM
Goal - 3 Year Average <2% Unavailability
Performance Manager - R. Estrada
Percent
3.0%
2.5%
2.0%
1.5%
1.0%
0.5%
0.0%
3.6
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Month
Goal (Below)
Industry Average
3 Year Average

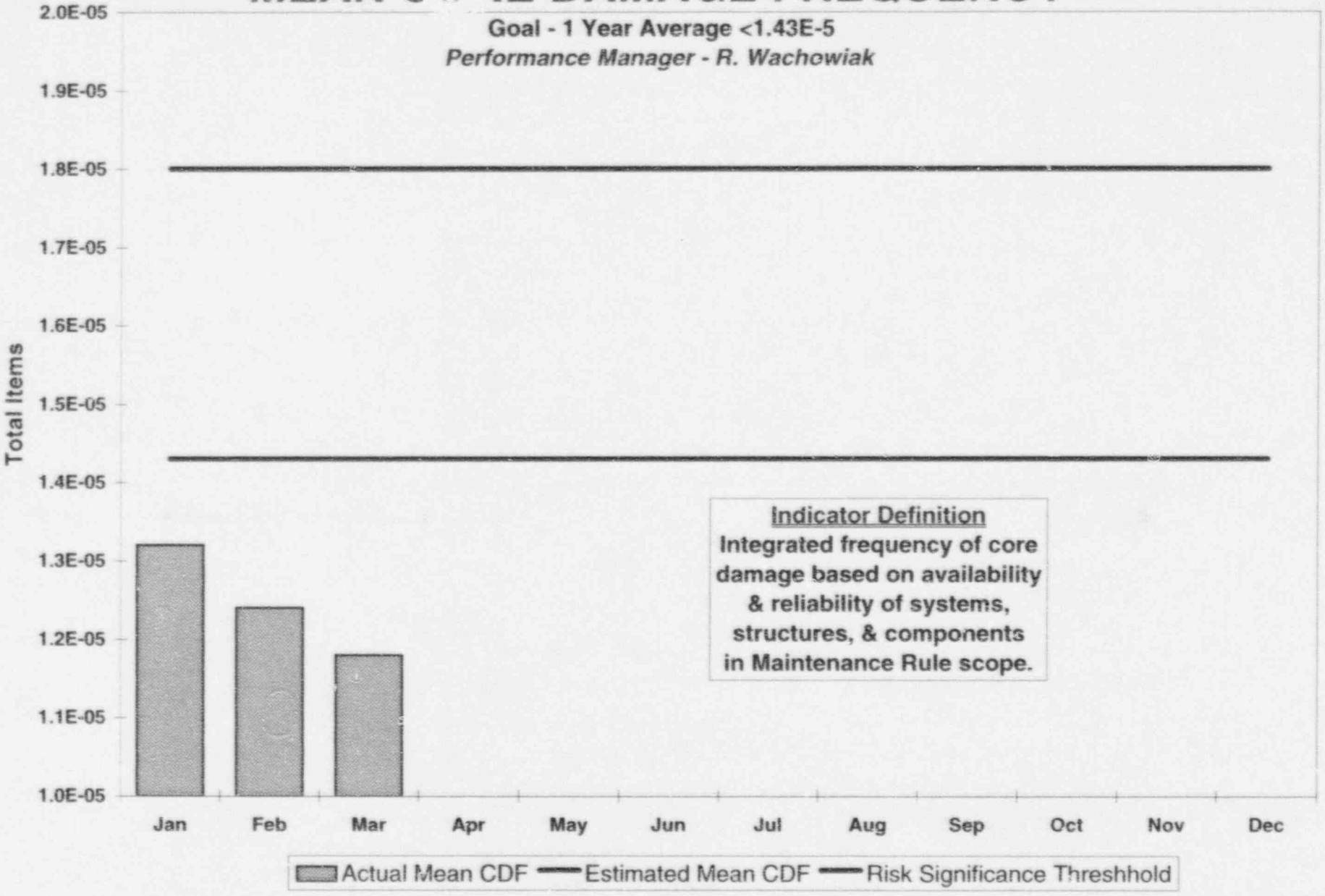
# RESIDUAL HEAT REMOVAL SYSTEM



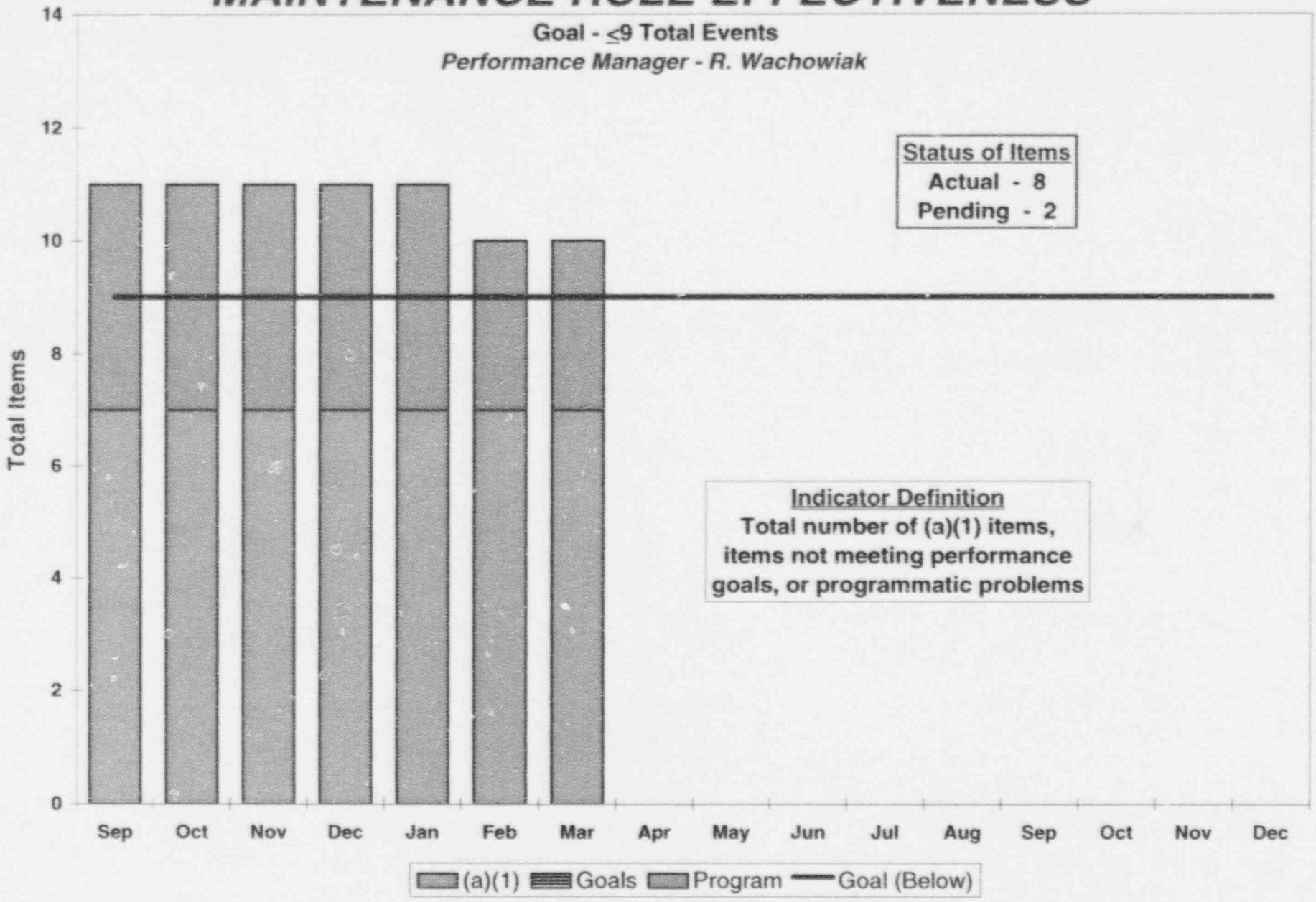
# HIGH PRESSURE INJECTION SYSTEM



# MEAN CORE DAMAGE FREQUENCY



# MAINTENANCE RULE EFFECTIVENESS



Attachment 4
to NLS970063

# ATTACHMENT 4

- **System Engineering Training Matrix**

# SYSTEM ENGINEER TRAINING

APRIL 7, 1997

| TPD | LESSON NO. | QUAL CARD TITLE | RLC | JIL | MLP | JGD | JEC | DJS | TB | RME | RSF | BPF | DMS | JHS | JKS | DCG | KMD | MFM | MLS | MRF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 502 | | ENGINEERING SUPPORT ORIENTATION PROGRAM | C | C | C | C | C | C | 970430 | C | C | C | C | C | C | C | C | C | C | C |
| 509 | | SYSTEM ENGINEER SPECIFIC ORIENTATION TRAINING | C | C | C | C | C | C | 970430 | C | C | C | C | C | C | C | C | C | C | C |
| 903 | | SYSTEMS ORIENTATION COURSE (3 WEEKS) | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | 971201 | 971201 | C |
| 945 | SKL060-34-10 | SPECIFY POST MAINTENANCE TEST REQUIREMENTS | C | C | C | C | C | C | 971220 | 970731 | C | C | C | C | NA | NA | NA | NA | NA | NA |
| 931 | SKL060-33-02 | EVALUATE TESTING INTERVALS USING APPLICABLE VENDOR RECOMMENDATIONS, OPERATING EXPERIENCE AND EQUIPMENT PERFORMANCE HISTORY | C | C | C | C | C | C | 971220 | 970731 | C | C | 970630 | C | C | C | C | C | C | C |
| 935 | SKL060-33-09 | DATA ANALYSIS, REVIEW AND TRENDING | C | C | C | C | C | C | 971220 | C | C | C | C | C | C | C | C | C | C | C |
| 941 | SKL060-34-03 | DETERMINE PREVENTIVE AND PREDICTIVE MAINTENANCE REQUIREMENTS FOR SELECTED SYSTEMS AND COMPONENTS | C | C | C | C | C | C | 971220 | C | C | C | 970630 | C | C | C | C | C | C | C |
| 942 | SKL060-34-04 | DEVELOP MAINTENANCE, SURVEILLANCE, AND OTHER TEST PROCEDURES | C | C | C | C | C | C | 971220 | C | C | C | 970630 | C | NA | NA | NA | NA | NA | NA |
| 953 | SKL060-34-21 | PREPARATION OF SPECIAL TEST PROCEDURE OR SPECIAL PROCEDURE | C | C | C | C | C | C | 971220 | 970731 | C | C | 970630 | C | NA | NA | NA | NA | NA | NA |
| 901 | SKL060-34-22 | 10CFR50.59 SAFETY EVALUATION PREPARER/REVIEWER | C | C | C | C | C | C | 971220 | C | C | C | C | C | NA | NA | NA | NA | NA | NA |
| 944 | SKL060-34-07 | OBSERVE THE QUALITY OF WORK | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C | C |
| 930 | SKL060-33-01 | ESTABLISH THE ACCEPTABLE PERFORMANCE LEVELS FOR SYSTEMS AND EQUIPMENT INCLUDED IN THE PERFORMANCE/RELIABILITY PROGRAM | C | C | C | C | C | C | 971220 | C | C | C | 970630 | C | NA | NA | NA | NA | NA | NA |
| 900 | SKL060-34-01 | PERFORMANCE OF OPERABILITY ASSESSMENTS | C | C | C | C | C | C | 971220 | C | C | C | C | C | NA | NA | NA | NA | NA | NA |
| 943 | SKL060-34-05 | PERFORMANCE OF SYSTEM WALKDOWNS | C | C | C | C | C | C | 971220 | C | C | C | C | C | C | C | C | C | C | C |
| 936 | SKL060-34-16 | ENGINEERING REVIEW OF COMPLETED SURVEILLANCE PROCEDURES AND RESOLUTION OF ASSOCIATED DISCREPANCIES | C | C | C | C | C | C | 971220 | C | C | C | C | C | C | C | C | C | C | C |
| 951 | SKL060-34-18 | INITIATION AND EVALUATION OF CONDITION REPORTS | C | C | C | C | C | C | 971220 | C | C | C | C | C | C | C | C | C | C | C |
| 2221 | SKL013-02-01 | KT ANALYTICAL TROUBLESHOOTING | C | C | C | C | C | C | 971220 | C | C | C | C | C | NA | NA | NA | NA | NA | NA |
| 538 | | SYSTEM ENGINEER POSITION SPECIFIC TRAINING | C | C | C | C | C | C | 971220 | 970731 | C | C | 970630 | C | N/A | N/A | N/A | N/A | N/A | N/A |
| 950 | SKL0603417 | PROVIDE TECHNICAL REVIEW OF MWR REQUESTS AND MWR REQUESTS RESULTS | C | C | C | C | 970631 | C | 970731 | C | C | C | C | C | C | C | C | C | C | C |
| 541 | | TG/BOP SYSTEM ENGINEER POSITION SPECIFIC TRAINING | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | C | C | C | 971201 | 971201 | C |
| 239 | | CNS PLANT TRAINING CERIFICATION PROGRAM OR PREVIOUS (BWR SRO/STE/STA CERT.) | | PREV | | | | CERT | PREV | | | | PREV | | CERT | | | | | |

13 of 18 System Engineers are fully qualified

Shaded areas indicate training completed since September 19, 1996

TB become a System Engineer on February 3, 1997

# ATTACHMENT 5

- **Design Basis and Configuration Control Recent Accomplishments**
- **Performance Indicator: DCD Development**
- **Performance Indicator: RE17 Modification Packages**

**Design Basis and Configuration Control**
**Recent Accomplishments**

**Design Basis Availability:**

- Issued 22 system Design Criteria Documents (DCDs) and 8 topical DCDs. (Of these, 16 DCDs were issued during the prior SALP period.)
- Installed and implemented 3D Monicore and SOLOMON software for reactor core monitoring.
- Upgraded accident analysis using SAFER/GESTR. (Submitted to NRC in March 1997)
- Reconstituted the setpoint calculations (approximately 53 calculations) for Improved Technical Specifications (ITS).
- Completed SQUG (USI A-46) and submitted report to the NRC.
- Significantly upgraded the cycle fatigue calculations (approximately 11 calculations).
- Improved Appendix R program and upgrading safe shutdown analysis.
- Implementing ITS.
- Started USAR update project.

**Design Basis Accessibility:**

- Upgraded databases to handle changes in procedures and processes.
- Upgraded computers and software.
- Significantly improved accessibility to design basis information (i.e., ISYS search for procedures, USAR, Technical Specifications, DCDs, Directives, etc...).
- Instituted the Information Resource Center (Engineering Library, all information in one area).

**Process Improvements:**

- Significantly improved the Drawing Change Notice process.
- Significantly improved the Modification process.

- Revised Maintenance procedures to better interface with modification process and eliminate new unauthorized modifications.

- Developed the new Engineering Evaluation process.

- Improved the rigging procedure.

- Improved the Classification Evaluation Package process.

- Improved the setpoint and meter banding process.

- Issued the new seismic housekeeping procedure.

- Improved the scaffolding procedure.

- Significantly improved the fatigue monitoring process.

- Significantly improved the temporary shielding process.

- Significantly improved the Replacement Component Evaluation process.

- Established coatings procedure for drywell areas.

**Backlog Reduction:**

- Reduced Engineering document backlog.

- Considerably reduced Environmental Qualification (EQ) backlog, improved EQ program as well as its interface with plant groups.

**ESP Training:**

- Improved Engineering continuing training.

- Developed position specific qualification guides.

- Developing position specific continuing training.

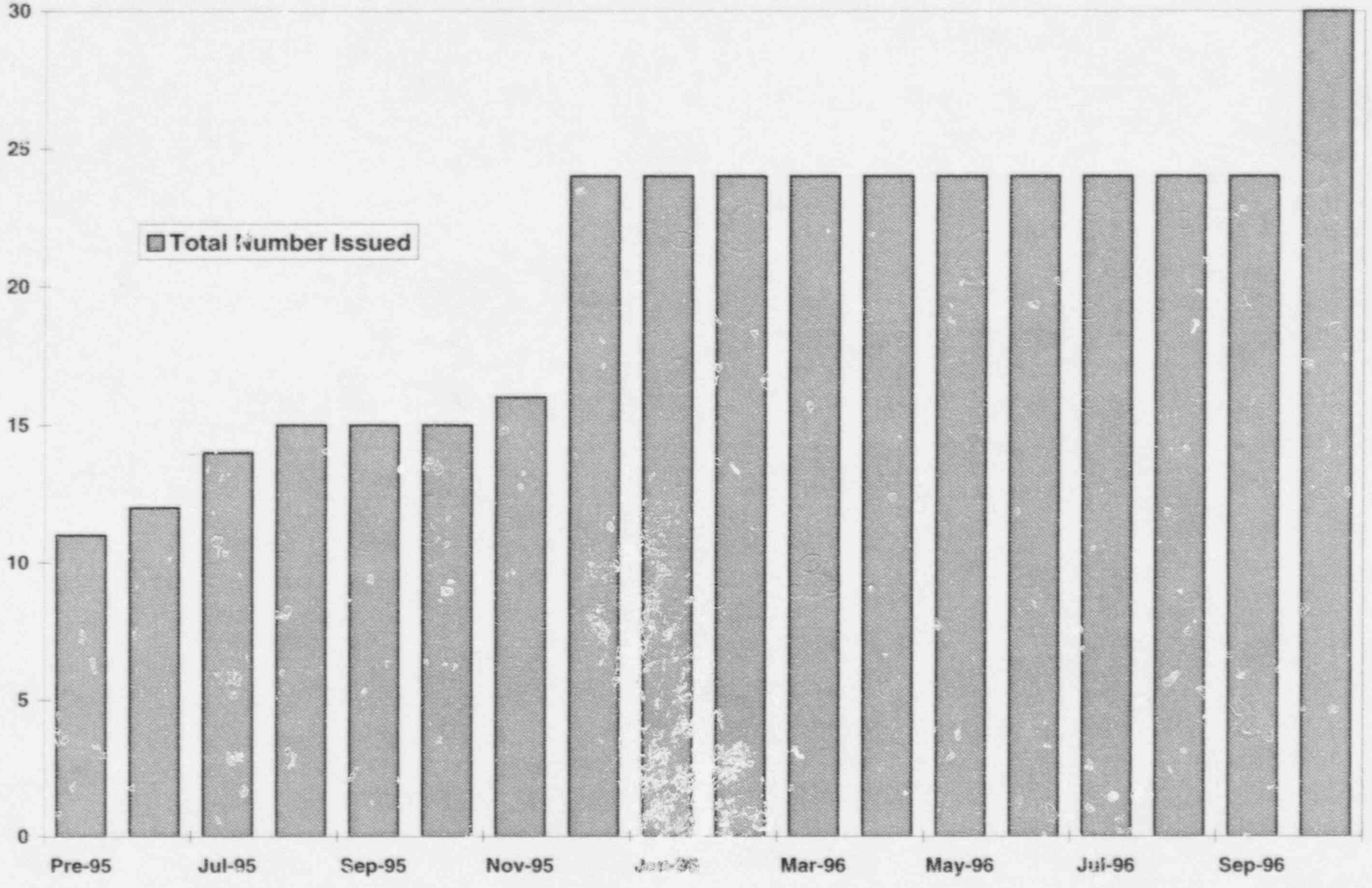
- Established three week systems course for engineers.

- Improved licensing basis training (i.e., 50.59 training).

- Established ESP training performance indicators.

- Two engineers received CNS Plant Certifications.

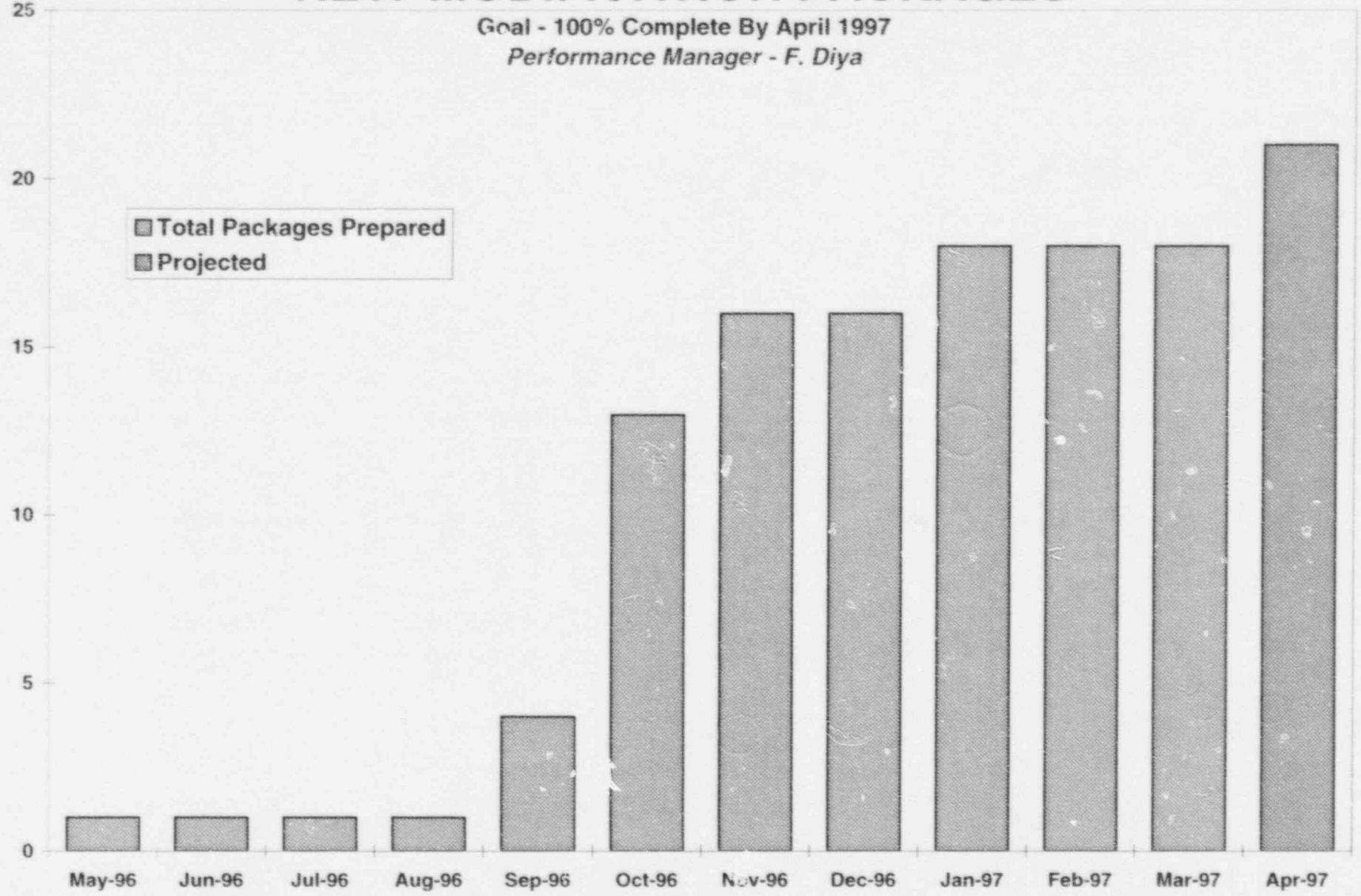
# DCD DEVELOPMENT



# RE17 MODIFICATION PACKAGES

Goal - 100% Complete By April 1997

*Performance Manager - F. Diya*

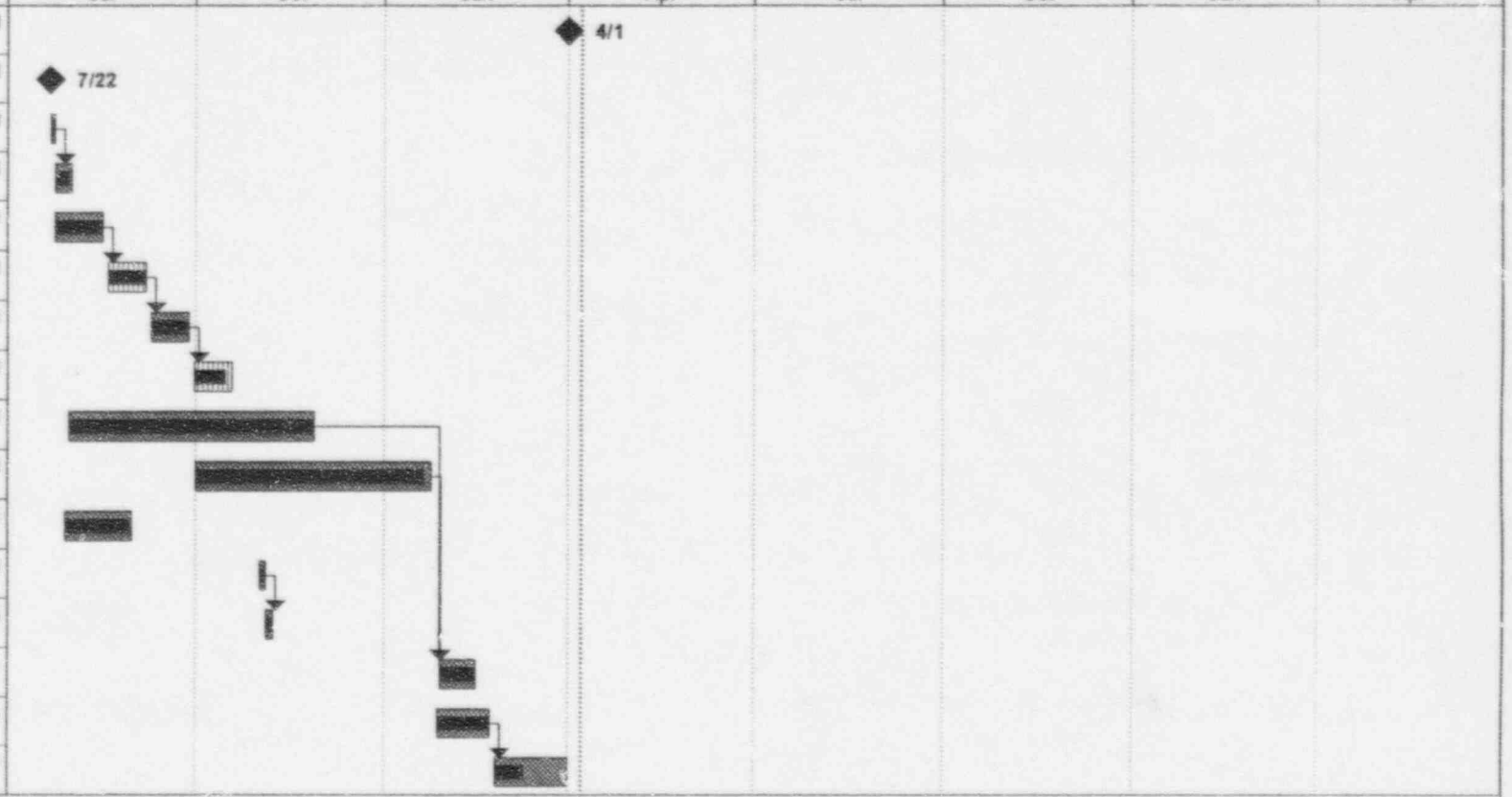


# ATTACHMENT 6

- **ITS Project Implementation Schedule**

ITS IMPLEMENTATION PHASE – SCOPING STAGE

| ID | Task Name | Duration |
|---|---|---|
| 1 | ITS Submittal to NRC | 1d |
| 2 | 1st 4 impl. team arrive | 1d |
| 3 | Inprocessing, orientation | 2d |
| 4 | Admin, computer setup, etc. | 5d |
| 5 | Draft Program Plan | 14d |
| 6 | Review Prog. Plan | 11.2d |
| 7 | Incorporate Prog. Plan comm | 12d |
| 8 | Review/approve Prog. Plan | 12d |
| 9 | ISYS search for doc. impact | 68d |
| 10 | Non-searchable doc. review | 60d |
| 11 | Create Implement. database | 20d |
| 12 | 2 add. ITS team arrive | 1d |
| 13 | Inprocessing,admin,computer | 3d |
| 14 | Schedule revs. from scoping | 11.2d |
| 15 | Scoping Program Plan revisio | 16d |
| 16 | Program Plan review & approv | 20.8d |




ITS Implementation Phase -- Scoping Stage

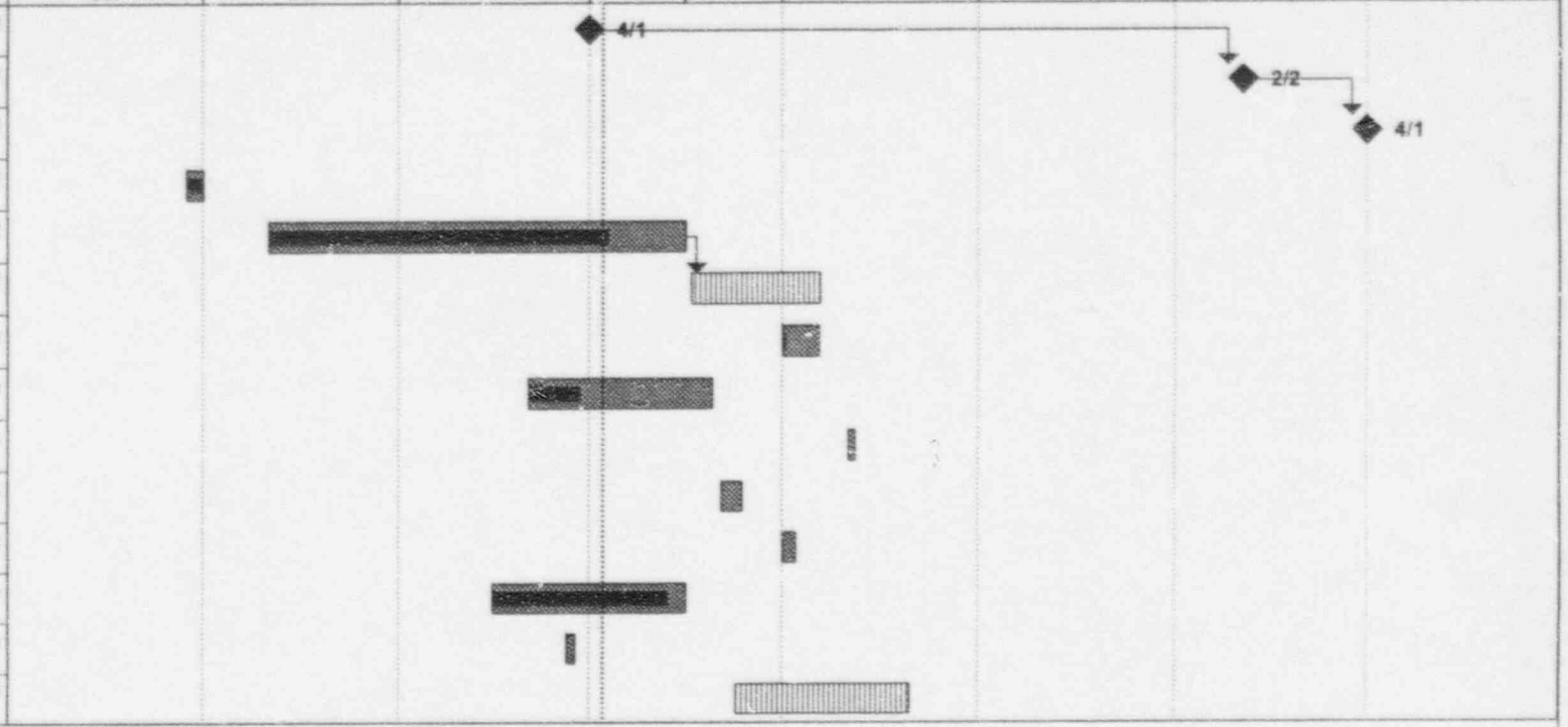
- As a guideline, durations expressed in hours indicate an individual dedicated to that task for the specified number of hours, whereas durations expressed in days indicate an individual partially dedicated to that task for the specified period or may indicate that several individuals are performing that task.
- The following bar style indicates EXCEL work:
- The following bar style indicates CNS work:

Project:
Date: Mon 4/7/97

Task
Progress
Milestone

ITS IMPLEMENTATION STAGE -- PROGRAM SCHEDULE

| ID | Task Name | Duration |
|---|---|---|
| 1 | ITS Submittal to NRC | 0.8d |
| 2 | SER issuance by the NRC | 0.8d |
| 3 | ITS IMPLEMENTATION | 0.8d |
| 4 | Develop TRM shell | 5d |
| 5 | Draft TRM specifications | 106.4d |
| 6 | Review/approve TRM Specs | 34.4d |
| 7 | Develop remainder of TRM | 100h |
| 8 | Draft SFDP | 500h |
| 9 | Revise COLR | 10h |
| 10 | Draft 5 single page programs | 65h |
| 11 | IST/ISI reference changes | 30h |
| 12 | Revise ODAM | 528h |
| 13 | Reformat/relocate PCP | 20h |
| 14 | Review/approve 7-13 | 47.2d |




## ITS Implementation Stage -- Program Schedule

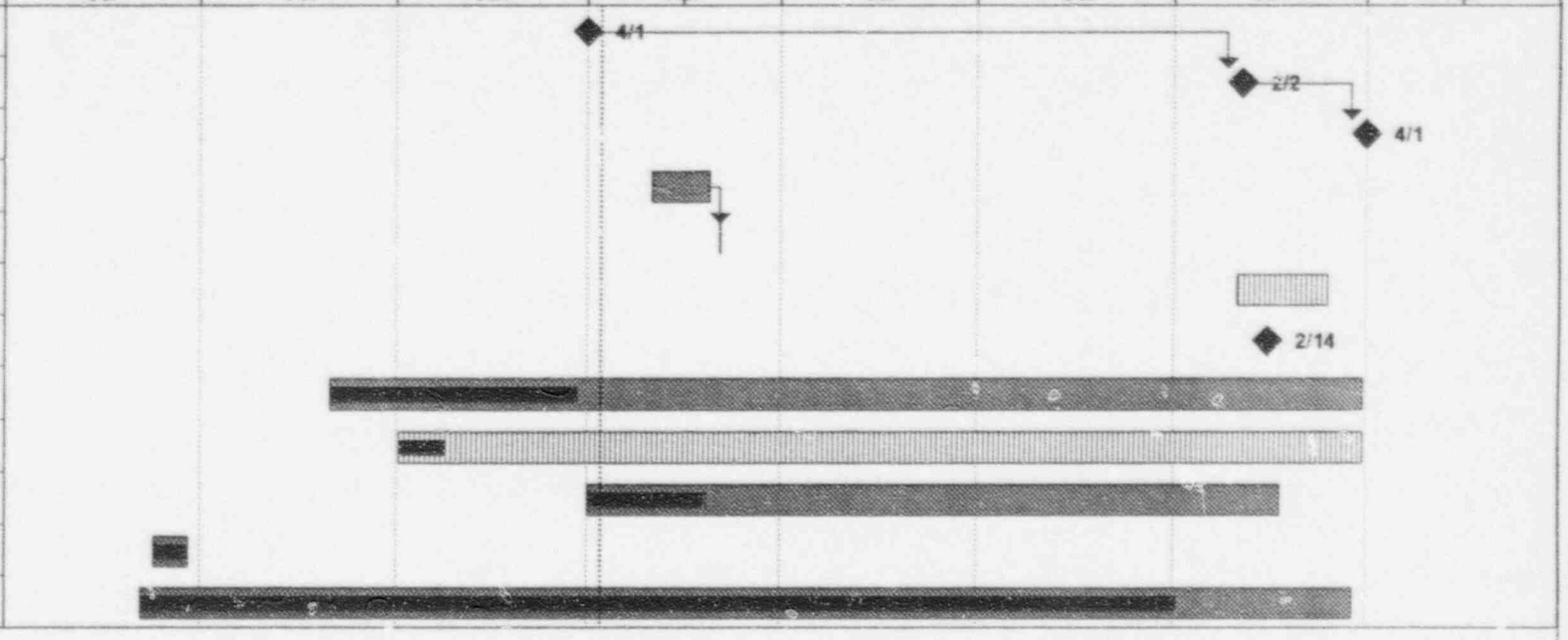
- ID #5-7 are directly impacted by the Conversion Phase schedule. Delays in conversion package review and approval impact the TRM schedule on a day for day basis.
- As a guideline, durations expressed in hours indicate an individual dedicated to that task for the specified number of hours, whereas durations expressed in days indicate an individual partially dedicated to that task for the specified period or may indicate that several individuals are performing that task.
- The following bar style indicates EXCEL work:
- The following bar style indicates CNS work:

Project:
Date: Mon 4/7/97

Task
Progress
Milestone

ITS IMPLEMENTATION STAGE-- PROCEDURE SCHEDULE

| ID | Task Name | Duration |
|---|---|---|
| 1 | ITS Submittal to NRC | 0.8d |
| 2 | SER issuance by the NRC | 0.8d |
| 3 | ITS IMPLEMENTATION | 0.8d |
| 4 | ID new&mr SRs not curr. 10/1 | 15d |
| 5 | List from 4 provided to NRC | 0.8d |
| 6 | Perform new/more rest. SRs | 25d |
| 7 | All new & more rest. approved | 1d |
| 8 | Write/revise procedures | 269.6d |
| 9 | Process,approve,issue proced | 256d |
| 10 | Revise USAR & DCDs | 184d |
| 11 | Create minor revision process | 100h |
| 12 | Database maintenance | 316.8d |




## ITS Implementation Stage -- Procedure Schedule

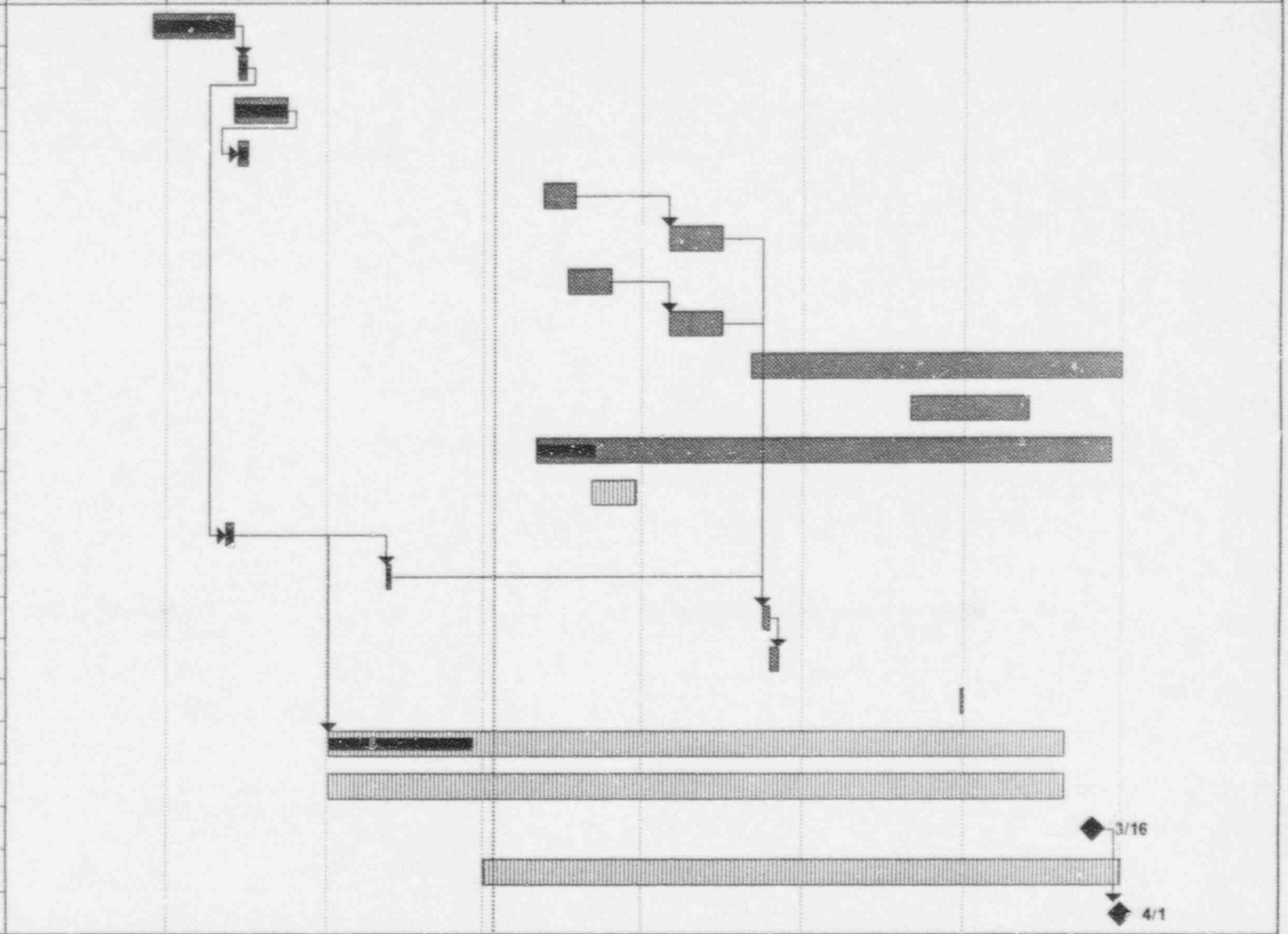
- ID #6-10 are impacted by the Conversion Phase schedule. Delays in submittal, review, and subsequent SER issuance prevent procedures and other documents from being finalized. This will result in documents being revised and placed on hold, awaiting SER issuance to assure their validity. Numerous documents would then be placed in the review cycle simultaneously.
- As a guideline, durations expressed in hours indicate an individual dedicated to that task for the specified number of hours, whereas durations expressed in days indicate an individual partially dedicated to that task for the specified period or may indicate that several individuals are performing that task.
- Procedures will be revised in the following order: 1) new and more restrictive procedures, 2) technical changes, 3) minor non-technical changes, and 4) less restrictive changes.
- The following bar style indicates EXCEL work:
- The following bar style indicates CNS work:

Project:
Date: Mon 4/7/97

Task
Progress
Milestone

# ITS IMPLEMENTATION PHASE -- TRAINING SCHEDULE

| ID | Task Name | Duration |
|---|---|---|
| 1 | Write 9 ITS lesson plans | 280h |
| 2 | Review & approval 9 ITS LPs | 40h |
| 3 | Write 50% of ITS workbook | 150h |
| 4 | Approval of 50% workbook | 40h |
| 5 | Last 4 ITS lesson plans | 120h |
| 6 | Approval last 4 new ITS LPs | 18.4d |
| 7 | Completion of ITS workbook | 150h |
| 8 | Approval of workbook | 18.4d |
| 9 | Revise existing lesson plans | 120d |
| 10 | Revs. for program and proc. | 40d |
| 11 | Exam bank rev. and new ?s | 184.8d |
| 12 | Revision of SKL052 bank | 160h |
| 13 | First cycle training of trainers | 40h |
| 14 | 2nd cycle training of trainers | 24h |
| 15 | 3rd cycle training of trainers | 36h |
| 16 | 4th cycle training of trainers | 24h |
| 17 | ITS revs training of trainers | 16h |
| 18 | Lic. Operator training | 238.4d |
| 19 | Other maint. & tech staff trng | 238.4d |
| 20 | Proficiency exams passed | 0.8d |
| 21 | Parallel Operations ITS/CTS | 205.6d |
| 22 | ITS IMPLEMENTATION | 0.8d |




Project:
Date: Mon 4/7/97

Task
Progress
Milestone

ITS Implementation Phase -- Training Schedule (cont'd)

- Only significant delays in the licensing of the submittal will impact the Training Schedule.
- As a guideline, durations expressed in hours indicate an individual dedicated to that task for the specified number of hours, whereas durations expressed in days indicate an individual partially dedicated to that task for the specified period or may indicate that several individuals are performing that task.
- ID #1 includes review and revision of INT 07.
- ID #9 & ID #11: These tasks include review and revision of COR 009-99, COR 001, COR 002, SKL 012, SKL 051, and SKL 053. The scope of EXCEL work includes revision of up to 475 exam questions and 160 lesson plans.
- ID #13, #14, #15, and #16: Each of these items includes 8 hrs. of preparation time; the remainder being EXCEL training of CNS trainers, including Operations, Maintenance, and Tech Staff. The training sessions are scheduled at least 2 weeks prior to the beginning of a cycle and will cover the information for that training cycle. The first session of 32 hours provides an overview of the entire ITS.
- ID #17 is an 8 hr. session to capture any changes made during the NRC review process. It is scheduled to take place prior to the last cycle before implementation.
- ID #21 is parallel operations utilizing the ITS while the CTS still govern. Although performed by Operations Department (as a minimum), it is a training activity, as well as a validation activity.

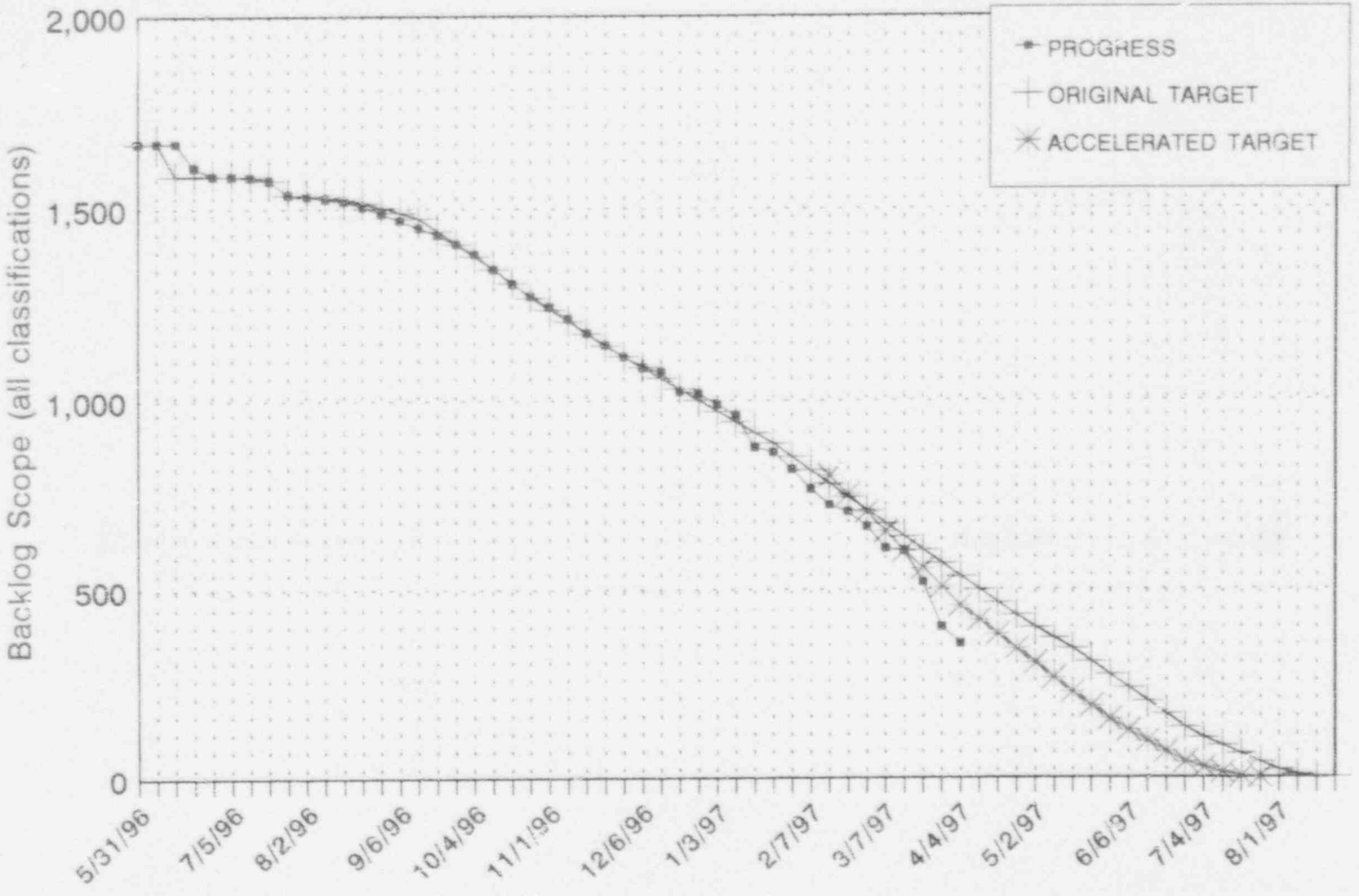
- The following bar style indicates EXCEL work: 
- The following bar style indicates CNS work: 

# ATTACHMENT 7

- **Performance Indicator: Engineering Backlog Reduction**

# Engineering Backlog Reduction

## Performance Manager: J. F. Nevill (Enercon)

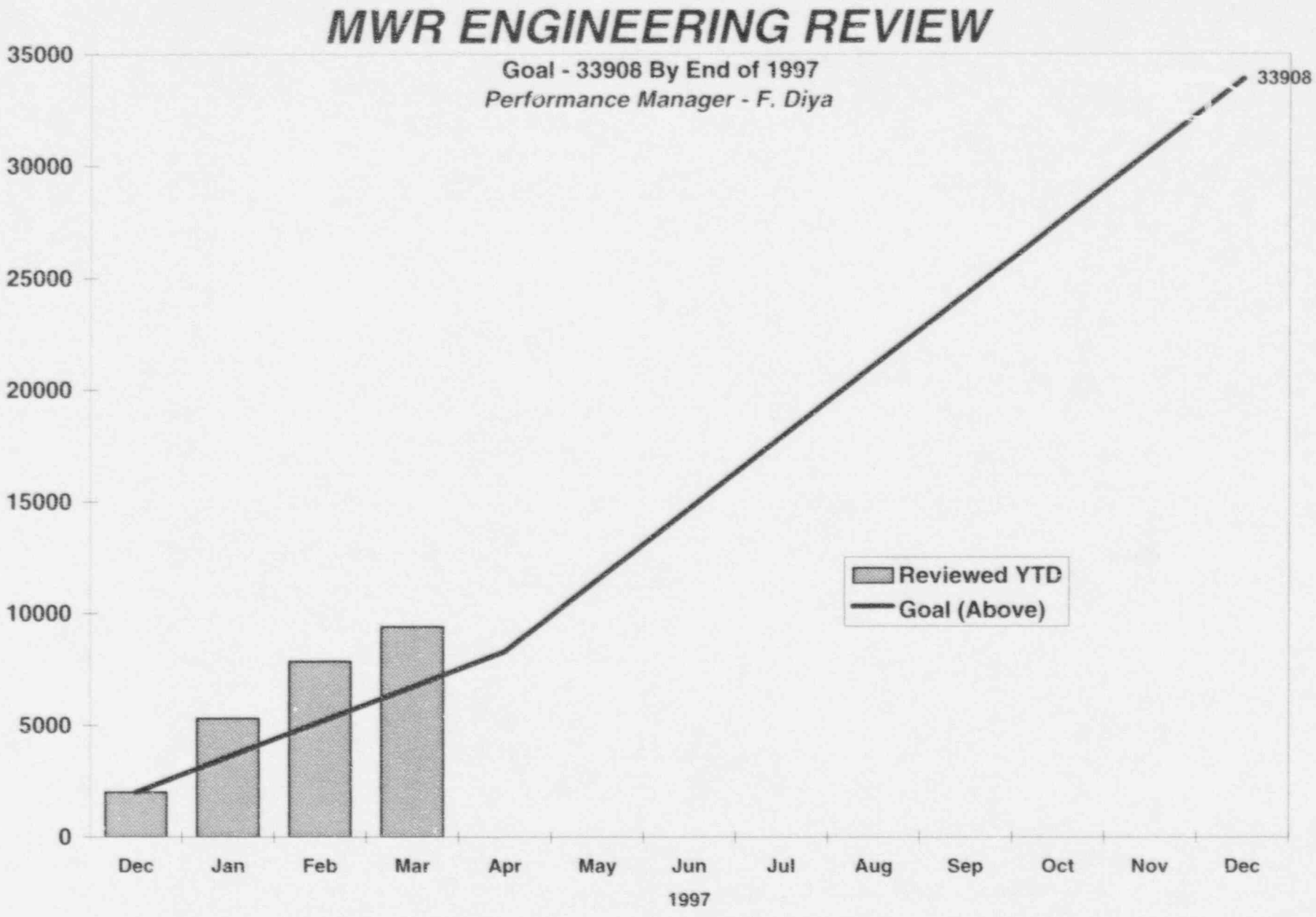



Data Date: 4/4/97

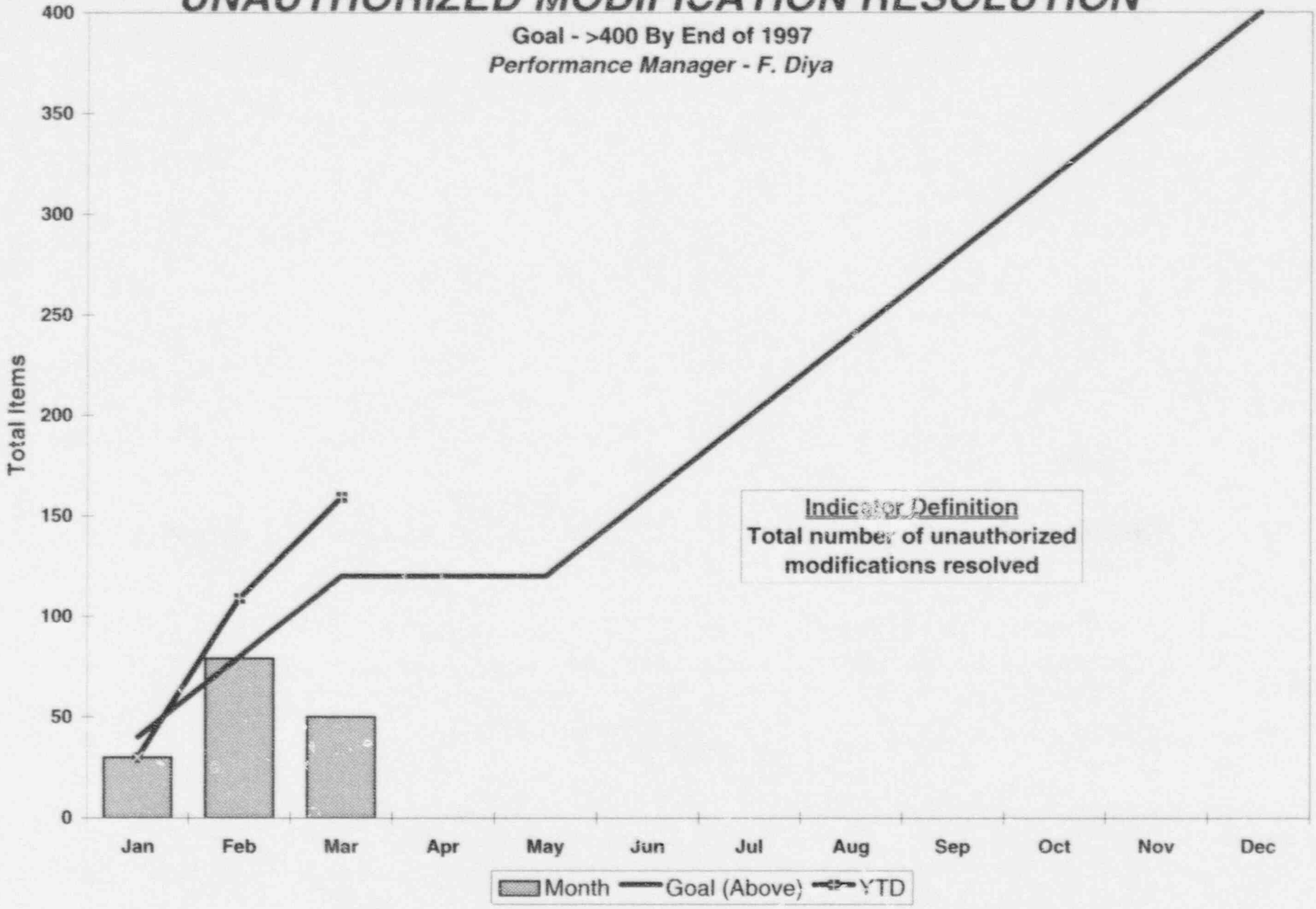
RLP\pel4.CH9

# ATTACHMENT 8

- **Performance Indicator: MWR Engineering Review**
- **Performance Indicator: Unauthorized Modification Resolution**


MWR ENGINEERING REVIEW
Goal - 33908 By End of 1997
Performance Manager - F. Diya
35000
30000
25000
20000
15000
10000
5000
0
33908
Reviewed YTD
Goal (Above)
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1997

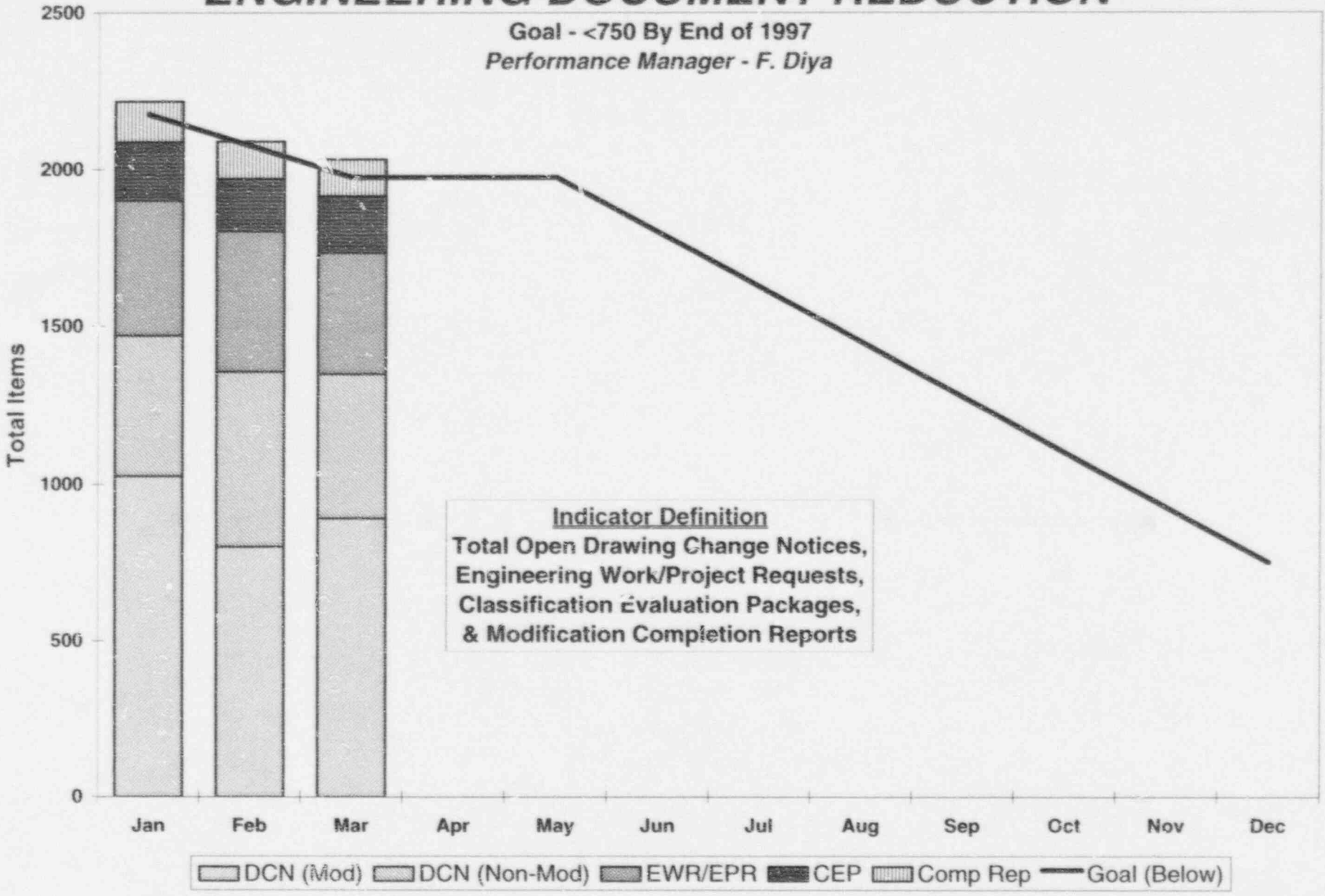
# UNAUTHORIZED MODIFICATION RESOLUTION



# ATTACHMENT 9

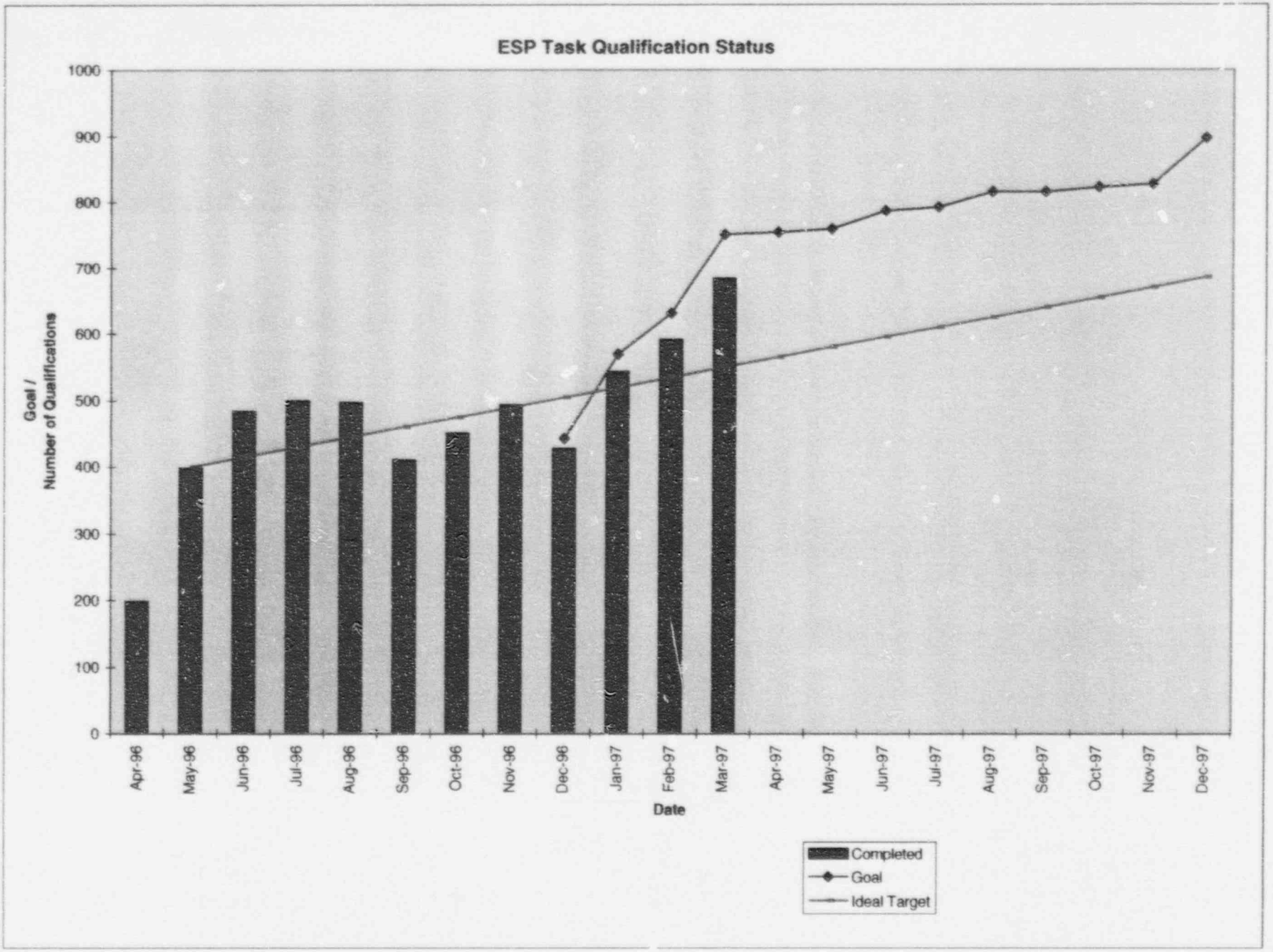
- **Performance Indicator: Engineering Document Reduction**

# ENGINEERING DOCUMENT REDUCTION



# ATTACHMENT 10

- **Performance Indicator: ESP Task Qualification Status**


ESP Task Qualification Status
Goal / Number of Qualifications
1000
900
800
700
600
500
400
300
200
100
0
Apr-96
May-96
Jun-96
Jul-96
Aug-96
Sep-96
Oct-96
Nov-96
Dec-96
Jan-97
Feb-97
Mar-97
Apr-97
May-97
Jun-97
Jul-97
Aug-97
Sep-97
Oct-97
Nov-97
Dec-97
Date
Completed
Goal
Ideal Target

# ATTACHMENT 11

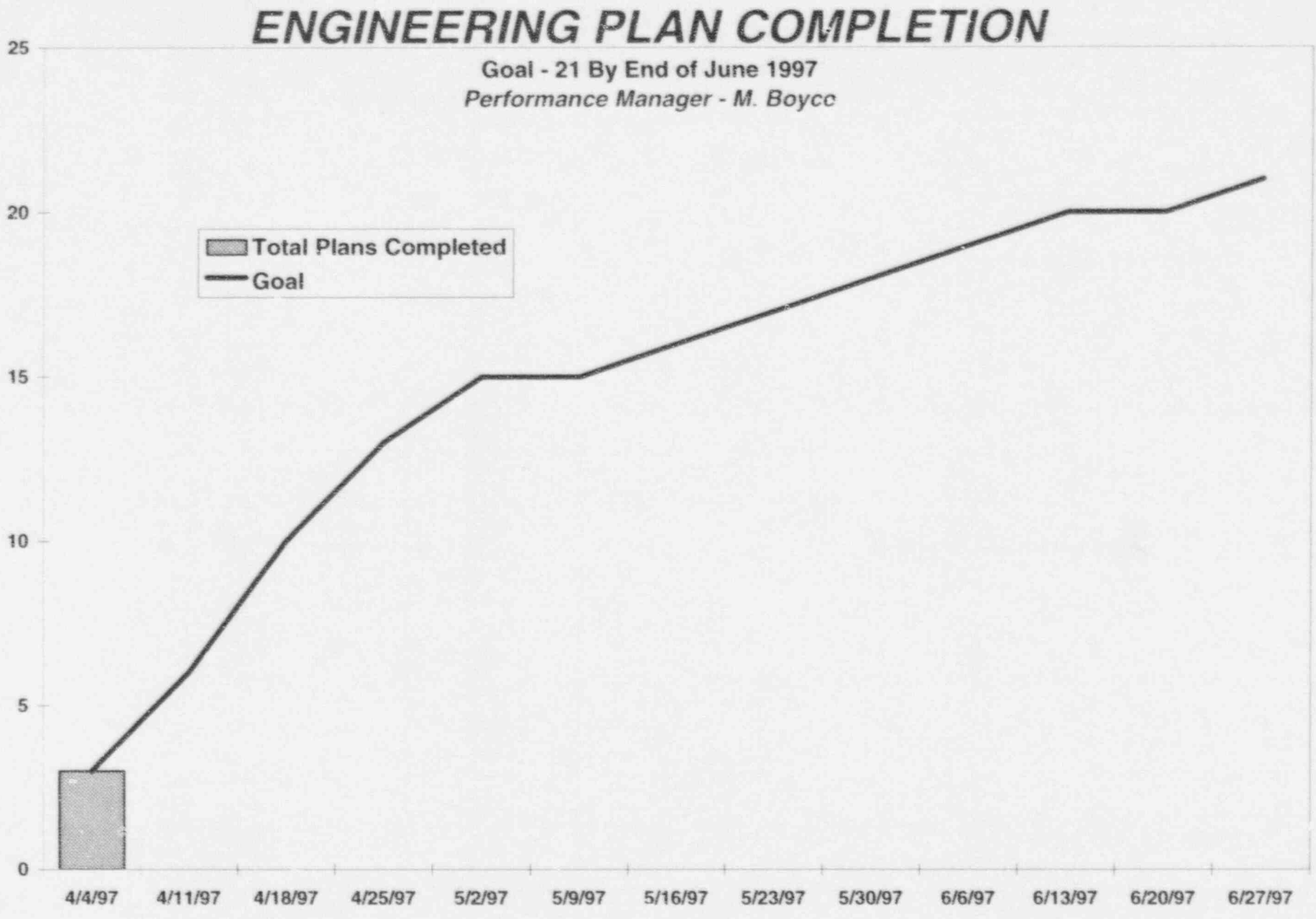
- **Engineering Must Do's List, November 1996**
- **Engineering Must Do's List, April 1997**

| ENGINEERING MUST DO'S | | | |
|---|---|---|---|
| *Item #* | *Must Do Item Description* | *Owner* | *Mentor(s)* |
| 1. | Training | Ken Done | Alan Bysfield<br>Todd Hottovy<br>Scott Freborg |
| 2. | FIN Team | Beth Hannaford | Jim Pelletier |
| 3. | Scheduling | Jack Steiner | Rick Wachowiak |
| 4. | Phase 3<br>(Including Configuration Management) | Zach Wahab | Fadi Diya |
| 5. | Outage Management<br>- Outage Organization<br>- Outage MWRs<br>- Outage Procedures/Programs Work<br>- Outage Contracts | John Swanson<br>Scott Freborg<br>Matt Ralstin<br>Mark Fletcher | Mick Spencer |
| 6. | 120 day 50.54f letter | Ken Thomas | Jim Pelletier |
| 7. | System Engineering<br>(Including System Monitoring) | Joe Cass | Jerry Dorn<br>Jim Salisbury |
| 8. | Modifications (Outage & Non-outage) | Glenn Seeman | Dan Buman |
| 9. | Specific Process Improvements | Ray Rexroad | Dhiren Pandya<br>Zach Wahab |
| 10. | ITS | Jim Dykstra | Robert Godley/<br>Brad Houston |
| 11. | Appendix R | Mick Spencer | Fadi Diya |
| 12. | Potential Unauthorized Modifications | Perry Adelung | Dhiren Pandya/<br>Fadi Diya |
| 13. | Backlog<br>- Prioritize<br>- Work important stuff<br>- Know what we have<br>- Make sure nothing important sits<br>- Eliminate backlog<br>- Smart plan to eliminate<br>- Possible special process to handle backlog | Bryan Seidl | Russ Wenzl<br>Jim Flaherty<br>Zach Wahab |

| ENGINEERING MUST DO'S | | | |
|---|---|---|---|
| **Item #** | **Must Do Item Description** | **Owner** | **Mentor(s)** |
| 1. | USAR Rebaseline | Russ Wenzl | Jim Pelletier |
| 2. | System Engineering<br>(Including System Monitoring) | Joe Cass | Jerry Dorn<br>Jim Salisbury |
| 3. | Backlog<br>- Prioritize<br>- Work important stuff<br>- Know what we have<br>- Make sure nothing important sits<br>- Eliminate backlog<br>- Smart plan to eliminate<br>- Possible special process to handle backlog | Bryan Seidl | Dan Buman |
| 4. | Specific Process Improvements | Ray Rexroad | Mike Boyce |
| 5. | Unauthorized Modifications | Perry Adelung | Dhiren Pandya |
| 6. | Configuration Management | Zach Wahab | Fadi Diya |
| 7. | RE17 Lessons Learned | Jim Flaherty | Ole Olson |
| 8. | Modifications (Outage & Non-Outage) | Glen Seeman | Fadi Fiya |
| 9. | Appendix R | Mick Spencer | - |
| 10. | Scheduling | Jack Steiner | Rick Wachowiak |
| 11. | ITS | Jim Dykstra | - |

# ATTACHMENT 12

- **Performance Indicator: Engineering Plan Completion**


ENGINEERING PLAN COMPLETION
Goal - 21 By End of June 1997
Performance Manager - M. Boyce
Total Plans Completed
Goal
25
20
15
10
5
0
4/4/97
4/11/97
4/18/97
4/25/97
5/2/97
5/9/97
5/16/97
5/23/97
5/30/97
6/6/97
6/13/97
6/20/97
6/27/97

Correspondence No: NLS970063

The following table identifies those actions committed to by the District in this document. Any other actions discussed in the submittal represent intended or planned actions by the District. They are described to the NRC for the NRC's information and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

| COMMITMENT | COMMITTED DATE OR OUTAGE |
|---|---|
| None. | |
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