

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON NUMARC'S PERSPECTIVE OF THE
STATE OF THE NUCLEAR INDUSTRY

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON NUMARC'S PERSPECTIVE
OF THE STATE OF THE NUCLEAR INDUSTRY

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Friday, October 26, 1990

The Commission met in open session,
pursuant to notice, at 10:00 a.m., Kenneth M. Carr,
Chairman, presiding.

COMMISSIONERS PRESENT:

KENNETH M. CARR, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
JAMES R. CURTISS, Commissioner
FORREST J. REMICK, Commissioner

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

EUGENE McGRATH, Chairman of the Board, NUMARC;
Chairman and CEO, Consolidated Edison Company of New
York

JOHN BRONS, Executive Vice President, Nuclear
Generation, New York Power Authority

PHILIP CLARK, President and CEO, GPU Nuclear
Corporation

BYRON LEE, President and CEO, NUMARC

JOE COLEMAN, Executive Vice President, NUMARC

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P-R-O-C-E-E-D-I-N-G-S

10:03 a.m.

CHAIRMAN CARR: Good morning, ladies and gentlemen.

Let me first apologize for a cold. Having said that, keep your distance.

This morning we will hear from the members of the Nuclear Management and Resources Council, NUMARC, on their perspective on the state of the nuclear industry. Specific topics include updates on industry maintenance and procurement activities.

On December 1989, the Commission approved revisions to its policy statement on maintenance of nuclear power plants to emphasize the Commission's expectations and actions planned in the maintenance area and to restate the Commission's views with respect to what constitutes an effective maintenance program.

The Commission believes safety can be enhanced by improving nuclear power plant maintenance across the nuclear industry. NRC maintenance team inspections have confirmed that further improvements are necessary, especially with regard to effective implementation of maintenance programs.

The Commission recognizes that the

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1 industry and individual licensees have made
2 improvements in their maintenance programs and that
3 the industry is committed to continue to improve
4 maintenance. In view of this commitment, the
5 Commission decided to hold maintenance rulemaking in
6 abeyance for an 18 month period to monitor industry
7 initiatives in progress and to assess the need for
8 rulemaking in this area at the end of this period.
9 The Commission is looking forward to hearing results
10 of your efforts today.

11 The Commission has also been concerned
12 with licensees' capability to assure the quality of
13 procured products. In March 1989, the NRC issued for
14 public comment an advanced notice of proposed
15 rulemaking, acceptance of products purchased for use
16 in nuclear power plant structures, systems and
17 components, and Generic Letter 89-02, actions to
18 improve the detection of counterfeit and fraudulently
19 marketed products.

20 In April 1990, the Commission agreed that
21 the NRC staff will defer programmatic inspections of
22 licensees, commercial grade procurement and dedication
23 programs and will not issue any new enforcement
24 actions concerning programmatic deficiencies in this
25 area for one year.

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1 NUMARC has proposed a framework for
2 improving performance and procurement that the
3 Commission is also looking forward to hearing about
4 today. As you well know, any such initiative requires
5 good implementation on the part of each licensee to
6 truly produce improvement. I think this particularly
7 important in an area where existing NRC regulations
8 require measures to ensure the quality of parts and
9 materials.

10 Mr. McGrath, Mr. Brons and Mr. Clark, we
11 welcome each of you here today. We appreciate very
12 much your being with us this morning and providing us
13 with your perspective on the state of the nuclear
14 industry.

15 Do any of my fellow Commissioners have
16 opening comments they would like to make before we
17 begin?

18 COMMISSIONER REMICK: Oh, I'd just say we
19 welcome Mr. Lee and Mr. Coleman also.

20 CHAIRMAN CARR: Do you think we really do?
21 All right. We'll grant that. Do you want to vote on
22 it?

23 Any other comments?

24 If not, Mr. McGrath, you may proceed.

25 MR. McGRATH: Good morning. I'm Gene

1 McGrath. I'm Chairman and Chief Executive Office of
2 Consolidated Edison Company of New York and I'm
3 Chairman of NUMARC. With me today are Phil Clark,
4 President of CEO of GPU Nuclear, and Jack Brons,
5 Executive Vice President of New York Power Authority.
6 Also, Byron Lee, President and CEO, and Joe Coleman,
7 Executive Vice President of NUMARC.

8 Phil, Jack and I are all members of the
9 NUMARC Board and on the Executive Committee.

10 We appreciate this opportunity to share
11 with you our view of several key recent
12 accomplishments and to discuss some of the ongoing
13 challenges for the industry. We hope to give you an
14 understanding of some of our overall activities and to
15 focus on areas where we need NRC support to achieve
16 our mutual goals.

17 Attached to your viewgraphs is a handout
18 entitled, "Major Issues Affecting the Nuclear
19 Industry." This is a list of the major issues the
20 nuclear power industry is working on through NUMARC,
21 this list currently covering 57 major issues, which
22 should give you a feeling for the significant industry
23 resources being committed to resolving regulatory
24 issues. These resources are being drawn from across
25 the entire nuclear industry. All nuclear utilities,

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1 the four NSSS vendors, and five architect/engineering
2 firms participate fully not only in their own shops,
3 but also in the NUMARC board working groups and
4 committees.

5 NUMARC is the focus of our efforts to
6 enhance our operational effectiveness on regulatory-
7 related matters and to improve the quality and
8 constructive character of the industry's contributions
9 to the regulatory process. NUMARC represents the
10 entire nuclear power industry on generic issues
11 through the active involvement of the industry as a
12 whole. We -- and when I say we, I mean the entire
13 nuclear power industry -- are expending tremendous
14 resources to improve our operations and to address our
15 concerns and the concerns of the NRC.

16 Today we'd like to brief you on recent
17 industry efforts in two of the major areas on the list
18 of issues. First, Jack Brons will update you on
19 recent activities and progress in the area of
20 maintenance and then Phil Clark will summarize recent
21 activities and accomplishments in the area of
22 procurement. Following their discussion, I'll discuss
23 some of our views and the state of our industry, as
24 well as areas where we need your support.

25 Jack?

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1 MR. BRONS: Good morning. I'm Jack Brons
2 from the New York Power Authority. Today I would like
3 to discuss overall industry activities in the
4 maintenance area.

5 Let me start by assuring you that this
6 industry's leadership is committed to the goal of
7 achieving improved reliability and safety through
8 better maintenance. That commitment was stated early
9 in an October 28th, 1988 letter from the former NRC
10 Chairman, Lando Zech, to then NUMARC Chairman Robert
11 Campbell, and signed by every member of NUMARC's
12 Board, that is all nuclear utilities. That commitment
13 was reaffirmed by the NUMARC Board of Directors at its
14 June 1990 meeting. The commitment goes beyond mere
15 words. The real proof is a significant utility
16 investment and involvement in improving maintenance.
17 As I will discuss later, all factors demonstrate that
18 this investment is paying off.

19 The industry began to address maintenance
20 in a coordinated manner in 1984 through a NUMARC
21 working group. The many initiatives and efforts that
22 resulted from this effort have been discussed with you
23 previously. Through the work of individual utilities,
24 INPO, EPRI and others, these efforts have paid off in
25 improved performance. Rather than repeat those

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1 points, I would like to focus on what we have done to
2 sustain continued improvement.

3 The focal point of our activities has been
4 the development of a comprehensive, integrated action
5 plan to coordinate and focus industry actions to
6 improve nuclear power plant maintenance. This plan
7 includes many key activities being undertaken by
8 nuclear utilities, industry organizations such as
9 EPRI, INPO and NUMARC, as well as the four vendors
10 owners groups and various codes and standards
11 developing organizations. This morning I will review
12 the status of plan implementation and focus on several
13 specific accomplishments since this plan was provided
14 to you last February.

15 The plan covers the following broad
16 subject areas:

17 INPO plant evaluation and assistance
18 activities; monitoring the performance and maintaining
19 the reliability of equipment; training; monitoring
20 activities; communications and regulatory interface;
21 tools and techniques; owners group activities. These
22 are areas that we believe need additional attention.
23 In many cases, these were identified by both industry
24 and NRC special maintenance inspection teams.

25 Overall, there are 189 specific action

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1 items to be accomplished within the seven major areas.
2 Many of these actions are ongoing and are expected to
3 become a way of life. As of September 30th, 1990, the
4 last update of plan status, 109 have been completed.
5 Of the open action items, 22 are overdue or have been
6 rescheduled. Seven are overdue because the original
7 completion dates were based upon NRC actions yet to be
8 completed.

9 Management attention to maintenance. Let
10 me now discuss some of the specific actions that we've
11 taken. One important area of the plan emphasizes the
12 need for greater management attention to maintenance
13 to ensure that corrective actions are effectively
14 implemented. This includes providing assistance to
15 plants most in need of improvements in the maintenance
16 area. As you might imagine, the focus of these
17 efforts has been through INPO's Evaluation and
18 Assistance Program.

19 Specifically, INPO has increased the focus
20 of their evaluation on maintenance, placed additional
21 emphasis on areas such as monitoring of key aspects of
22 maintenance, use of goals, effectiveness in
23 identifying and correcting recurring equipment
24 problems, engineering support for maintenance and
25 others. They've conducted in-depth reviews of key

1 equipment performance during each evaluation. They've
2 added additional evaluators to teams to focus
3 specifically on maintenance and root cause problems,
4 conducted assistance visits to plants needing
5 additional improvement and maintenance. Specifically
6 at least one special assistant visit was conducted at
7 each of the 12 stations most in need of additional
8 help.

9 Another important area is that of
10 monitoring the performance and monitoring the
11 reliability of equipment most important to safe and
12 reliable plant operations. We placed additional
13 emphasis on improving NPRDS effectiveness and use, and
14 emphasis on enhancing our ability to analyze equipment
15 problems and determine their root cause.

16 Specifically, each utility has implemented
17 a quarterly review of component failure analysis
18 reports which allows it to use NPRDS to identify
19 plant-specific components with higher failure rates
20 compared to the industry average. The scope of NPRDS
21 was expanded. A detailed analysis of events and
22 equipment failures that resulted in loss of generating
23 capability over a recent six year period was
24 conducted. As a result, approximately 80 additional
25 balance of plant components were added to the over

1 5,000 components per plant tracked by NPRDS. INPO has
2 issued good practices on predicted maintenance
3 techniques and how to conduct effective root cause
4 analysis.

5 The industry has expended significant
6 resources on the maintenance indicator area over the
7 last six years and has attempted to define a set of
8 quantitative indicators that accurately represent the
9 quality of maintenance performed in the plant. From
10 those efforts, we have concluded that while it's
11 possible to monitor elements of the maintenance
12 process, it is not possible to quantitatively measure
13 the quality or effectiveness of maintenance itself.

14 The recent efforts of your staff to
15 develop a maintenance effectiveness indicator bear out
16 this conclusion. Their recent report, SECY-90-351,
17 recommended against adoption of the proposed indicator
18 for similar reasons.

19 We continue to believe the industry
20 overall performance indicators, taken in the
21 aggregate, combined with other direct assessments,
22 such as observation, provide the most effective means
23 of monitoring maintenance performance.

24 Each utility has also established plant-
25 specific, long-term 1995 goals for each of the

1 industry overall performance indicators. These are
2 consistent with the worldwide consensus set of
3 performance indicators developed by WANO. INPO will
4 determine the appropriate industry-wide 1995 goals
5 based on this input by November this year. Although
6 we believe the overall performance indicators are the
7 best way to monitor maintenance performance, we
8 haven't given up on learning from each other. We have
9 emphasized identifying plant-specific techniques
10 different utilities use to monitor effectiveness and
11 set goals. Each utility has provided that information
12 to INPO. They are collating it and will determine
13 what follow-up action is most effective.

14 The industry has continued to develop and
15 refine a variety of tools and techniques to support
16 effective maintenance programs. One of these tools
17 under development is reliability centered maintenance.
18 Significant industry resources are being placed on
19 this to determine the appropriate methodology for
20 integrating this approach into maintenance programs.
21 We're pursuing RCM because we believe it holds the
22 potential for reduced costs and improved operations.
23 In effect, we hope it will allow us to optimize the
24 preventive maintenance programs at our stations, that
25 is to perform smart maintenance.

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1 The demonstration of the RCM concept has
2 been focused through the Ginna and San Onofre
3 reliability centered maintenance projects coordinated
4 by EPRI. These are nearing completion. The final
5 reports have been submitted for final review and
6 publication. Expected results include preventive
7 maintenance optimization, improved reliability and
8 reduced costs in many plant systems. Further, we know
9 of at least 17 other stations that are evaluating or
10 have completed an RCM process on selected systems.

11 To facilitate information exchange, EPRI
12 held three regional workshops this year to transfer to
13 transfer the methodologies developed during the pilot
14 program to other utility participants.

15 We continue to place emphasis on specific
16 equipment and systems. A significant portion of that
17 effort is completed by the NSSS Owners Groups. The
18 NSSS Owners Group's involvement is essential in
19 addressing areas that are NSSS specific and in
20 emphasizing ways to improve plant performance in areas
21 such as reduction of reactor scram frequency and
22 improvement in plant transient response.

23 My time is obviously much too short to
24 cover the many actions identified in the plant in
25 depth. The best way to understand the scope and depth

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1 of industry actions to improve maintenance is to read
2 the plan and the status report that was sent to you
3 earlier this week. I encourage you to do so. We
4 would appreciate any questions, comments or
5 suggestions you may have.

6 Let me now summarize the status of
7 maintenance in the industry. First, maintenance
8 performance, as well as overall plant performance,
9 continues to improve. All ten overall performance
10 indicators tracked by INPO show improvement for the
11 first six months of 1990. By example, equivalent
12 availability factor, which is one of the best
13 indicators of long-term performance and depends
14 strongly on effective maintenance, shows an increase
15 from 65.2 percent in 1989 to a projected 1990 value of
16 69.1 percent.

17 Comparing the performance of U.S. plants
18 with other countries shows the same results. Two
19 years ago we were compared with the Japanese and the
20 French as examples of people who were doing things
21 right. This curve shows the capacity factor for
22 nuclear plants in the United States, France and Japan.
23 The U.S. average year to date at over 67 percent is
24 above France, but still below Japan.

25 This slide, in the distribution of

1 capacity factors, shows part of the reason. Seven of
2 our plants have capacity factors under 10 percent due
3 to extended shutdowns, mostly for regulatory reasons.
4 If these plants were operating near the average
5 capacity factor it would boost the U.S. average to
6 nearly 72 percent, very close to Japan who we're
7 always compared against.

8 Your own special maintenance team results
9 through August 1990 show similar results. To date,
10 only one station has been assessed as poor in its
11 programs and only two stations in implementation.

12 Contrary to the view that you expressed,
13 Chairman Carr, I think in looking at an area as broad
14 as maintenance that these are excellent results. This
15 is especially true when you recognize that the scope
16 of your inspections cover the total maintenance area
17 at our plants and they're even based on guidance very
18 similar to the industry's own guidance developed in
19 1985.

20 We wanted to use SALP data to show
21 maintenance improvement, but we couldn't correlate the
22 SALP to the results of the maintenance team
23 inspections or necessarily to overall plant
24 performance. All other indices of performance show
25 similar trends. For example, NPRDS shows improving

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1 trends over the past three and a half year period in
2 motor operated and check valves, inverters, main
3 feedwater pumps, feedwater regulating valves, reactor
4 coolant and recirculation pumps, reactor coolant and
5 recirculation pump motors. These are areas on which
6 the industry has placed additional attention.

7 Second, we have tried to address the
8 Commission's concern over the perceived lack of a
9 maintenance standard. In April of this year, NUMARC
10 transmitted to you INPO-90-008, maintenance programs
11 in the nuclear power industry. This document sets
12 forth the industry standards for maintenance that all
13 utilities, as members of INPO, are committed to meet.
14 A comparison of the Commission's revised policy
15 statement on maintenance, the NRC's maintenance team
16 inspection criteria, and the industry standard
17 demonstrates the similarity of the industry and
18 regulatory views. We are still awaiting the results
19 of staff acceptance of this approach.

20 Third, the industry is still under the
21 threat of a rule on maintenance and now the Commission
22 has directed the staff to prepare an alternative
23 maintenance rule on which we hope to have the
24 opportunity to comment. As you are well aware, the
25 industry firmly believes that utility-specific and

1 industry-wide initiatives to improve maintenance are
2 the best and quickest way to achieve a high standard
3 of maintenance. Any rule, no matter how well
4 intended, will only divert our effort.

5 The NRC and industry have seen that
6 problems can be resolved without the need for
7 additional regulation, as proven by our successes in
8 training. Conversely, we have seen that even broad
9 general rules can be devastating. Appendix R and
10 environmental qualifications are examples of this
11 point.

12 In the maintenance area, the industry has
13 in-depth expertise in the commitment to ensure
14 improvement, not just in words but by demonstrated
15 actions. The results I've discussed clearly show this
16 fact and the NRC has the means today to evaluate
17 maintenance performance and to require additional
18 action on a case by case basis if necessary. With all
19 the progress made in the maintenance area, we continue
20 to be surprised by the intensity of the Commission's
21 continuing focus on maintenance and maintenance
22 rulemaking.

23 Let me focus on the importance of NRC
24 evaluating performance. This goes to the alternative
25 maintenance rule proposal the staff is addressing. We

1 view looking at performance as an essential ingredient
2 to effective regulation. Too many times we find that
3 performance is satisfactory, yet NRC inspections and
4 pressures exist to make changes to our programs that
5 do not yield positive results. More often than not,
6 however, they result in significant increases in cost.
7 We see the Commission's proposed alternative rule as
8 one way to address the issue of bottom line results.

9 In my opinion, however, I don't believe
10 the NRC is ready for this approach. The best recent
11 example we have to illustrate this point is diesel
12 generator reliability, an issue still being addressed
13 by the staff. In 1974, the staff identified Generic
14 Issue B-56, whose goal was to achieve improvement in
15 average diesel reliability to 0.95. The industry
16 responded and since 1983 NRC and industry agree that
17 diesel reliability is greater than 0.98.

18 The industry also has taken a number of
19 significant actions to improve diesel reliability,
20 including the adoption of several NUMARC initiatives
21 to improve monitoring, set threshold levels for
22 actions based on reliability and so forth. Each
23 utility has a docketed licensing commitment to the NRC
24 through the station blackout rule to either 0.95 or
25 0.975 reliability to which inspection and enforcement

1 action can be taken.

2 Given all the above, it's not clear why
3 the issue is not closed. The staff continues to press
4 for detailed prescriptive and programmatic
5 requirements in diesel reliability programs and have
6 indicated their intent to achieve this through a
7 generic letter. It's also of concern that there's a
8 proposal to use a generic letter to achieve what could
9 not be achieved through rulemaking.

10 From this example, I think you can see the
11 NRC's look at performance at the bottom line results
12 is still not enough to cause the staff to close out
13 the issue. I sincerely hope that I'm proven wrong in
14 this area because the approach is important to allow
15 us the flexibility to effectively manage our plants
16 and to do so in a cost effective manner.

17 In closing, as you can see, the industry,
18 utilities, INPO, EPRI, NUMARC, owners groups, have
19 made a dedicated, long-term commitment to improve
20 maintenance. I brought some of these points to the
21 Commission's attention two years ago in another
22 briefing session. I am intensely proud to report to
23 you that the industry has sustained its efforts.
24 Progress has been made and it is clearly measurable.

25 I hope this update will prove helpful to

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1 you in your future deliberations on maintenance.
2 Thank you.

3 Now, Phil Clark will brief you on our
4 activities in the area of procurement.

5 MR. CLARK: Thank you, Jack.

6 Mr. Chairman, Commissioners, the industry
7 has undertaken an enormous effort in the past two
8 years to address issues of alleged fraud and
9 substandard components. As I will show you, we've
10 moved beyond the original specific NRC concerns to
11 address broad-based and programmatic changes. These
12 efforts have already resulted in significant
13 improvements to utility programs and additional
14 improvements are to be implemented over the next two
15 years and will fully address, we believe, the changing
16 nuclear marketplace.

17 As you know, the industry took the
18 initiative in this area with NUMARC coordinating the
19 program. NUMARC's involvement in the procurement area
20 began in the spring of 1988. At that time, industry
21 had notified NRC of possible fraud by suppliers of
22 piping flanges and circuit breakers. In July of 1988,
23 then Chairman Zech asked the industry to tackle what
24 appeared to be a major problem.

25 The pipe flange issue resulted in NRC

1 Bulletin 88-05, which dealt with allegedly
2 nonconforming pipe fittings and flanges supplied by a
3 specific supplier. The next visual provides an
4 overview of industry activities in response to this
5 bulletin. The bulletin required the industry to
6 perform records reviews to locate the suspect
7 components, perform in-situ testing or otherwise
8 justify continued operation if we did not have results
9 indicating ASME code material.

10 This written request resulted in an
11 industry-wide commitment of approximately 100 man-
12 years per month before NUMARC entered it to coordinate
13 the efforts. NUMARC developed the program to compile
14 and analyze the reams of data being developed by
15 utilities in response to the bulletin, to perform
16 destructive laboratory testing, and to provide a
17 generic stress analysis report.

18 As shown on the viewgraph, the record
19 review identified over 20,000 installed items. We did
20 in-plant testing of 7,000 items. We did laboratory
21 testing of over 600 items and developed hundreds of
22 plant-specific JCOs. We had a generic program to
23 analyze the results. The overall resource impact
24 applied to this issue was \$30 million and the result
25- was that all installed items were found suitable for

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1 service. There were about two dozen blind flanges
2 identified with less than specified strength or with
3 adequate margin to operate safely. This issue was
4 resolved by the fall of 1988 and was officially
5 closed, as you know, last year.

6 The second example involved the concern
7 that certain electrical equipment suppliers were
8 providing misrepresented molded case circuit breakers
9 to the industry and resulted in Bulletin 88-10 in
10 November 1988. The next visual summarizes our
11 activities in response to this issue. The bulletin
12 required traceability to the original manufacturers or
13 testing of safety-related breakers in stock and
14 follow-up actions for breakers installed in safety-
15 related applications. As shown on the visual, over
16 24,000 breakers procured as safety related were
17 reviewed in response to the bulletin, with the result
18 of less than one percent were provided or traceable to
19 the suspect suppliers.

20 In addition, industry extended this and
21 they looked at 36,000 breakers procured as non-safety
22 related equipment. The result there was that
23 approximately three percent was identified as suspect.
24 In both cases, the numbers identified things which
25 were suspect, not necessarily fraudulent or deficient.

1 Suspect breakers were either discarded or
2 returned to the original manufacturer and the breaker
3 issue is, we believe, moving towards closure, again
4 with no indication of a significant safety impact.

5 As a result of our extensive effort on
6 flanges and breakers and the absence of additional
7 industry-wide issues of potential fraud in the last
8 two years led us to several conclusions. First, the
9 issues with flanges and breakers were found to be of
10 no safety significance. Second, it appears the
11 previous procurement practices have been sound and
12 have not opened the door to widespread ingress of
13 substandard items. In fact, it was the existing
14 programs that identified the original suspect parts.
15 Third, the resources required to locate and identify
16 potentially substandard items can be very substantial
17 compared to the item's final safety significance.

18 As an overall conclusion, we believe
19 there's no crisis involving fraud and substandard
20 items diminishing the safety of the plants. This is
21 not to say that improvements should not be pursued.
22 Despite the fact that we found no safety significance
23 with flanges and breakers, we cannot ignore the
24 potential for issues of a greater significance.

25 Early in the efforts to address the

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1 flanges and circuit breakers in September of 1988,
2 NUMARC formed the Nuclear Plant Equipment Procurement
3 Group under Bill Cavanaugh, now President and CEO of
4 Entergy Operations. This group analyzed the problems
5 and developed appropriate improvements in procurement
6 programs for implementation throughout the industry.
7 It addressed programmatic issues as distinct and
8 broader from the component-specific NUMARC activities
9 described earlier. Several industry initiatives were
10 developed and are summarized in the next visual.

11 The working group recognized that the time
12 had come to reevaluate industry procurement practices
13 primarily because today's nuclear equipment
14 marketplace is very different from that which existed
15 when the procurement programs were first developed.
16 First, we've moved from procuring complete equipment
17 assemblies towards procuring replacement components
18 and pieced parts. Second, the number of suppliers
19 with Appendix B QA programs has dwindled over the
20 years because of the cost of maintaining those
21 programs for a limited market.

22 Also, the legal implications of
23 reportability under Part 21 as revised in October of
24 1989 for manufacturers and suppliers of commercial
25 parts have exacerbated this problem. The result has

1 been the increased need for utilities themselves to
2 procure commercial grade parts and dedicate them for
3 safety-related use.

4 Third, a growing number of parts in the
5 plants are becoming obsolete, requiring extensive
6 redesign, procurement from the surplus market or other
7 sources not originally envisioned. The working group
8 developed several basic considerations. It recognized
9 that Appendix B was designed to ensure quality through
10 good faith cooperation between vendors and utilities,
11 but not to guard against deceptive practices.
12 Fraudulent practices are possible under any system of
13 rules; so changes to the regulations to address fraud
14 we believe would have limited success.

15 Rather, the working group believed two
16 fundamental changes were needed. One was increased
17 awareness by utilities of the potential for fraud and
18 increased vigilance for fraudulent practices. This
19 change in mind set, we believe, has been accomplished
20 through the events of the past two years which have
21 highlighted to all of us the potential for fraud.
22 Several NRC information notices and industry
23 guidelines for detecting fraud have been issued and
24 utility personnel involved in each stage of the
25 procurement process are now on the lookout for

1 deceptive practices.

2 One recognition of this increased
3 awareness is reflected in a recent letter from Jim
4 Taylor to Carolina Power and Light acknowledging the
5 diligence of that utility's staff in detecting
6 misrepresented equipment and taking appropriate action
7 to preclude its installation.

8 The second change needed is a more
9 fundamental shift in emphasis from paperwork review to
10 verification of item performance. Total reliance on
11 paper can actually increase the potential for fraud
12 through false certification or misrepresentation.
13 Necessary improvement in this area is affected through
14 increased engineering involvement, particularly in
15 dedication of commercial grade items, in vendor audits
16 and in enhanced testing of items upon receipt to
17 verify performance.

18 In each of these areas, the key is
19 defining the appropriate technical verification
20 required based on many factors, including the
21 function, the procurement channel and the history of
22 the supplier. It's neither practical nor necessary to
23 verify every parameter or characteristic of every item
24 in every case. We believe reasonable assurance of
25 item performance remains the key consideration and

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1 criteria.

2 Increased engineering involvement reduces
3 the potential for fraud and it also addresses many of
4 the considerations of the changing marketplace. The
5 working group has reviewed and endorsed EPRI guideline
6 documents which provide a defined process for
7 dedication of commercial grade items for performance-
8 based vendor audits and to enhance receipt testing and
9 inspection. Several of these guideline documents were
10 being developed before the flange and circuit breaker
11 concerns arose.

12 The working group also recognized that
13 because of this new approach there would be need for
14 increased use of joint activities and information
15 sharing among utilities. These allow more efficient
16 use of the utility resources to avoid major
17 unnecessary increases in cost. The working group also
18 recognized INPO's nuclear network as an effective
19 means for timely sharing of many types of procurement
20 and quality-related information as a way to exchange
21 information and provide more timely awareness of
22 potentially substandard items.

23 For vendor audits, a voluntary industry
24 group called NUPIC was formed and is now performing
25 shared and joint vendor audits. One example of the

1 benefits is the NUPIC audit of INPO's fitness for duty
2 program which all INPO members can now utilize in lieu
3 of conducting some 50 individual audits of the
4 program. All domestic nuclear utilities are members
5 of NUPIC.

6 The working group met many times to
7 develop recommendations and held regular discussions
8 with NRC staff and management. The group has
9 completed its work and the improvements are now being
10 implemented industry-wide with two initiatives
11 approved by the NUMARC Board of Directors. The first
12 initiative deals with dedication of commercial grade
13 items for safety-related applications and was passed
14 by the NUMARC Board in March of 1989 for
15 implementation by the end of 1989.

16 The second initiative is the comprehensive
17 procurement initiative which addresses vendor audits,
18 joint activities, enhanced testing and inspection,
19 guidelines for fraud detection, information sharing,
20 obsolescence and general procurement. This initiative
21 was approved by the NUMARC Board this past June 1990
22 for implementation by all members by July of '92.
23 Many utilities have already implemented aspects of the
24 initiative.

25 Since past procurement activities have not

1 shown any significant safety problems, these
2 initiatives are intended to be forward looking. Only
3 its safety concerns are identified during an
4 individual company's review of their program or with
5 respect to a particular item procured in the past do
6 the initiatives recommend an item-specific look back.
7 Implementation of these improvements is a significant
8 undertaking and efforts to backfit the improved
9 practices of previous activities will limit our
10 ability to move forward with implementation.

11 As a result, the previous NRC inspections,
12 a number of utilities agreed to apply the improved
13 methodology by dedicating commercial grade items, to
14 apply that to past procurement activities. Once
15 again, no safety concerns were revealed, so we believe
16 our forward-looking position in this initiative is
17 proper.

18 The industry has made major strides in
19 this area over the past two years and these efforts
20 are continuing as the initiatives are implemented.
21 One driving factor clearly was the concern expressed
22 by NRC relative to fraud and substandard parts. It
23 gave us an opportunity to use industry expertise to
24 alleviate NRC concerns as well as those of the
25 industry in an efficient and more effective manner

1 than by adding new regulations. A review of the
2 industry initiatives, which are the final products of
3 the working group, clearly demonstrates that the
4 improvements go beyond those necessary to address the
5 regulatory issues and we believe existing regulations
6 are adequate and there is no need for revision or
7 addition to existing regulations in this area.

8 These improvements represent fundamental
9 changes in the way many utilities have done business
10 in the past. They require additional resources at a
11 time when O&M costs are coming under increasing
12 scrutiny. The fact that we have undertaken these
13 improvements we believe speaks to our recognition of
14 their long-term importance. We hope that we can
15 continue to work with the NRC staff to assess the
16 value of our initiatives or any shortcomings and then
17 work together to derive the maximum value from their
18 implementation.

19 We believe the nuclear power industry has
20 been on the forefront in addressing this area of fraud
21 and substandard parts which affects many other
22 industries and we're proud of that.

23 That concludes my remarks and I'll turn
24 the microphone back to Gene McGrath.

25 MR. McGRATH: Okay. Thanks, Phil.

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1 With maintenance and with procurement, we
2 have two examples of how the NRC and industry can work
3 together effectively without compromising our
4 respective responsibilities to achieve common
5 objectives. I believe these two examples can and
6 should serve as models of how to resolve other issues
7 of concern to the NRC. Updating you on progress in
8 these two areas is only part of the reason we're here
9 this morning. We also want to give our insights into
10 the state of the industry as it relates to the impact
11 of regulation on the nuclear power industry.

12 The results we've achieved so far working
13 together in the areas of maintenance and procurement
14 are unfortunately not the rule. Frankly, the view
15 from the trenches is not too good. The cumulative
16 impact of regulation and enforcement by the NRC, and I
17 mean both Headquarters staff and regional offices, is
18 significant and not always conducive to our efforts to
19 improve our operations and our striving for
20 excellence.

21 This message comes through loud and clear
22 in the regulatory impact survey of licensees and from
23 your own staff survey. Consider these comments:

24 "A basic concern of licensees is the
25 number and scope of requirements imposed by the NRC."

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1 Another quote, "A persistent comment was
2 that NRC requirements and pending requirements are
3 poorly integrated as to their overall effect on plant
4 operations and utility resources."

5 Another quote, "Licensees make a strong
6 plea for NRC to establish a priority system."

7 Finally, "Licensees commented that NRC
8 fails to appreciate that licensee preparation for and
9 support of NRC inspection activities involves several
10 man-years of licensee effort each year."

11 When I first read those concerns, I
12 believed them to be feedback from the recent
13 regulatory impact survey. They were not. In fact,
14 these comments are taken verbatim from the NRC's
15 survey of regulatory impact completed almost ten years
16 ago, better known as the O'Reilly Report. While the
17 NRC made several significant improvements following
18 that 1981 survey, like the creation of the Committee
19 for Review of Generic Requirements, CRGR, similarities
20 between the 1981 survey results and the 1990 survey
21 show that significant fundamental problems have not
22 been corrected.

23 It's the long-term nature of these
24 problems that is of most concern. It is here, we
25 believe, that strong Commission action and involvement

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1 is needed. The industry alone cannot solve these
2 problems, nor can NRC staff, regional offices or
3 resident inspectors solve these problems by
4 themselves. A necessary step is active, systematic
5 involvement by the Commission and by senior NRC
6 management.

7 I am mindful, Chairman Carr, that you're
8 not interested in or persuaded by general whining from
9 the industry about regulatory burdens and I agree. We
10 can't ask you to correct a problem we haven't
11 identified. I believe the industry did take your
12 challenge seriously in providing its feedback on the
13 regulatory impact survey and I'd like to provide you
14 with a few more specifics.

15 Looking again at the list of major issues
16 being addressed by the industry through NUMARC, the
17 sheer number of issues, the resources being expended
18 by both NRC and industry, the cumulative impact of
19 trying to deal with them all at once is a cause of
20 great concern. NRC's own lists contain many more
21 issues than a NUMARC list which contains only issues
22 that are generic for the entire industry. I don't
23 deny that many of these issues are important to
24 resolve, but unless both industry and NRC manages them
25 judiciously and carefully and in some order of

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1 priority it will face significant impacts on our
2 operations, our costs and our striving for excellence
3 and, as the 1981 survey concluded, potentially on
4 safety.

5 It might be nice to tackle all these
6 issues at once, but it's impossible for the industry
7 and the NRC to do that and do it right. Neither of us
8 has the resources.

9 Another area of concern is the time it
10 takes to resolve issues. For example, in December
11 '87, NUMARC requested that the NRC develop an interim
12 standard for hot particles. The reason was that our
13 personnel were receiving significant and unnecessary
14 whole body radiation exposure, to say nothing of the
15 cost of more than \$1.3 million a month trying to
16 comply with the staff's requirements. NRC agreed that
17 an interim standard could be developed in a relatively
18 short time, but not until NCRP issued its
19 recommendations. NCRP subsequently transmitted its
20 recommendations to the NRC in June of '88, but it
21 wasn't until August of '90, two years later, that NRC
22 issued its interim guidance in Information Notice 90-
23 48, enforcement policy for hot particle exposure.

24 The impact of this problem was well
25 documented in an industry survey covering over 90

1 percent of the utilities and discussed with the NRC in
2 June of '89. The results of that survey indicated
3 additional whole body radiation dose occurred of up to
4 20 person rem per reactor per year. A 50 percent
5 decrease in productivity occurred on jobs where hot
6 particles might be present. Seventy-three cases of
7 documented heat stress occurred, at which 43 resulted
8 in medical follow-up due to the requirements for
9 multiple layers of clothing to "protect" the
10 individuals.

11 The technical specification approval
12 program is another example of an issue that has a long
13 and protracted history. This issue first arose out of
14 the TMI accident when NRC published an advanced notice
15 of proposed rulemaking in July of 1980, followed by a
16 proposed rule to split the tech specs in March of '82.
17 The industry became actively involved in March of '85
18 and established a group including all four vendors
19 owners groups to work with the NRC.

20 The NRC's interim policy statement on
21 technical specifications was issued in February of
22 '87. This provided the criteria for the split of the
23 tech specs. Although the guidance for the split was
24 established by the Commission, items continue to be
25 added without technical justification, some that are

1 not even in the present standard tech specs. The
2 industry spent over \$20 million and expended thousands
3 of manhours in support of this proactive, voluntary
4 effort to achieve these improvements. Today we're
5 unsure that our efforts would produce the results we
6 all desire. Significant resources have been expended
7 to keep the program on track and when senior NRC
8 management gets involved, the process works. Thus,
9 it's clear if we're to succeed continual senior NRC
10 management support is essential.

11 Our focus as an industry, and I'm sure you
12 share this, has been to make the tech specs an
13 operator friendly document, not a licensing document.
14 It's generally agreed that one of the key values of
15 technical specifications is to communicate to
16 operations personnel exactly what the important limits
17 and limiting conditions are for safe plant operations.
18 With the time and money spent by the industry and the
19 NRC to go back to business as usual, to continue to
20 add a few more items to the technical specifications
21 without appropriate technical justification would be a
22 major step backward on an issue we both spent over ten
23 years to correct.

24 Yet another example of an unnecessarily
25 long closure time is the issue of diesel generator

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1 reliability that Jack discussed earlier. As he
2 indicated, the intended goal of the generic issue
3 identified in '74 and codified by the station blackout
4 rule in '88, was to achieve a reliability for demand
5 of 0.95. Industry performance has not only achieved
6 this goal, but surpassed it, yet the issue still
7 remains open.

8 Very simply, we're frustrated at our
9 inability together to reach closure on issues like hot
10 particles, technical specifications, diesel generator
11 reliability and many others on a list in a timely
12 manner. It's discouraging to look at our list over
13 the past three years and see that only a few items
14 have been closed and quite a few have been added.

15 In sum, the growing nature of the problem
16 is inconsistent with our demonstrated performance.
17 Even areas that seem to be working relatively well,
18 like procurement where the industry took the
19 initiative and demonstrated that it could respond to a
20 potential problem without requiring prescriptive
21 regulation by the NRC, are still a concern. The staff
22 recently issued SECY-90-304 describing our procurement
23 initiative and the NRC staff's plan to assessments at
24 selected facilities, the implementation of the
25 dedication programs, and the improvements made in the

1 licensees' comprehensive procurement program.

2 We understand the need for NRC to assess
3 our performance in this area and to take enforcement
4 action when violations of NRC rules occur. But we
5 must all recognize that it takes time to make
6 effective changes to programs. In this area and
7 others, we're concerned that individual licensees will
8 feel real or perceived pressure to conform to
9 individual NRC inspectors' views of what's needed.
10 We're even more concerned that licensees will be
11 subjected to regulatory penalties as they work to
12 implement the procurement initiative and others like
13 it. That would quickly choke off licensees'
14 willingness to seize the initiative and solve problems
15 on their own.

16 I hope senior NRC management and the
17 industry can work together to assure that this doesn't
18 happen. I'm told that NRC senior management
19 recognizes our concerns and is willing to work with us
20 to make this program beneficial. But to be
21 successful, it requires that senior management stays
22 involved.

23 We've been encouraged by the Commission's
24 efforts to undertake the regulatory impact survey.
25 The survey identified many problems. For example, the

1 impact on our operations and on our managers and
2 supervisors from NRC inspections; the number and
3 frequency of generic communications and the way
4 they're used inappropriately to impose requirements on
5 licensees; lack of prioritization by NRC of pending
6 regulations, generic communications and other
7 guidance; the cumulative effect of generic
8 communications; the impact of SALP on our operations
9 and so on.

10 Correction of each of these, in our view,
11 calls for the attention and continuing involvement of
12 senior NRC management. Let me assure you that our
13 industry shares with you the goal of a safe nuclear
14 plant operation. We're not interested in dodging this
15 responsibility. The industry has a big stake in a
16 strong and tough and credible NRC which enjoys the
17 confidence of the public. We're committed to doing
18 the things that are necessary and doing them right.
19 That's the only way we'll continue our improving
20 performance trends and achieve safe, efficient,
21 reliable operation of our plants.

22 We've gone to great lengths to create
23 institutions and networks, like the Institution of
24 Nuclear Power Operations, the National Academy of
25 Nuclear Training, and NUMARC, to help all nuclear

1 utilities achieve those objectives. I don't need to
2 remind you that some of those institutions have
3 significant powers of persuasion that can be and are
4 employed to focus the attention of any member that
5 loses sight of the industry's mission.

6 The steady improvement of performance
7 indicators during the '80s stands as evidence of our
8 earnest intent to improve our operations. We offer
9 our observations on the impact of the existing
10 regulatory environment and the expectation that you'll
11 take them constructively. We think it's crucial that
12 the underlying root causes of the concerns and issues
13 facing us are resolved and stay resolved.

14 We're anxious to respond to the staff's
15 plan to correct the problems identified by the
16 regulatory impact survey, but our views can be
17 considered by you as you proceed.

18 As an industry, one of the most signifi-
19 cant lessons we've learned, with your help, is the
20 absolute need for senior management involvement and
21 attention in all areas of our operations. Similarly,
22 we think it's essential for NRC senior management to
23 become intimately involved with the details of the
24 regulatory process where attention is needed, whether
25 it's sitting in on meetings of SALP boards or

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1 enforcement conferences, participating on inspection
2 teams or reviewing the interpretation of regulations.

3 Regulatory agencies, no less than
4 corporations, require careful involved management.
5 Without that, I fear regulatory impact survey in the
6 year 2000 would echo the one done this year and the
7 one done now ten years ago. A stable regulatory
8 process is vital to the success of this industry's
9 self-imposed obligation to achieve excellence in its
10 nuclear operations and thus to the future of nuclear
11 power in our country.

12 A stable process is one in which
13 requirements are applied uniformly, in which
14 interpretations do not vary from plant to plant and
15 region to region, in which regulatory changes are
16 carefully screened for real benefit.

17 A stable regulatory process is flexible.
18 It sets priorities among issues and requirements and
19 allows licensees time and latitude to make necessary
20 improvements in areas like maintenance and
21 procurement. This demands continual senior regulatory
22 management involvement.

23 Perhaps most important, a stable process
24 is interactive and requires an honest, professional
25 and open arms-length relationship between the

1 regulator and the regulated.

2 Specifically in the areas of maintenance,
3 procurement and operator requalification, we think
4 we've made real progress in that matter. I hope and
5 believe we can apply those lessons to the many other
6 important issues we face.

7 Thank you for the opportunity to speak
8 candidly with you today. We'll, of course, be glad to
9 answer any questions you might have.

10 Thank you.

11 CHAIRMAN CARR: Thank you.

12 Questions, Commissioner Remick?

13 COMMISSIONER REMICK: Roughly a handful, I
14 guess, of questions and observations. But first, I do
15 want to say that I do appreciate the candid
16 discussion. One of the things that somewhat surprised
17 me as a Commissioner is sometimes what I hear out in
18 the field is not what I hear at this table. I think
19 you've been very straightforward this morning and I
20 certainly appreciate your comments.

21 I have a couple questions. You indicate,
22 and I know from our staff information, that based on
23 the maintenance team inspection so far, and I think
24 about three-quarters of them have been conducted,
25 there are three have been graded poorly, two have

1 programs but not implementing and one they didn't have
2 a program. Without speaking specific about those
3 plants, but in general, what is industry doing to
4 address what I would call outliers in that area?

5 MR. BRONS: Well, as I mentioned,
6 Commissioner Remick, the 12 stations that the industry
7 felt were in most need of additional help have been
8 the subject of special assist visits from INPO dealing
9 with that. In addition, we've made a concerted effort
10 to involve the folks at those stations as peer
11 evaluators, thereby taking them out of those stations
12 and taking them to other stations to see maintenance
13 programs in action that are functioning well. To
14 date, 11 of those 12 stations have provided
15 maintenance peers and the one remaining station is
16 scheduled to do so before the year is out.

17 So, that's the primary focus that we have
18 to improve --

19 COMMISSIONER REMICK: So, assist visits--
20 through assist visits?

21 MR. BRONS: Yes. I might mention that
22 they're rather differently crafted assist visits in
23 that they not only involve INPO staff, peers from
24 other stations, but in these visits they also include
25 as a member of the evaluation team people from the

1 utility being evaluated, which is designed to help in
2 the buy-in process. So, they become involved in
3 seeing the problems and become a part of the
4 resolution.

5 COMMISSIONER REMICK: I assume because
6 they are generally assist visits that they are
7 requested by the outlier utility, outlier plant?

8 MR. BRONS: These were -- I suppose that
9 you could say that. It's sort of a euphemism, but --

10 MR. CLARK: They were agreed upon.

11 COMMISSIONER REMICK: Okay. All right.
12 Okay.

13 MR. McGRATH: The other thing that's very
14 helpful in the maintenance area is when maintenance
15 people go to other plants where it's done well.
16 They're doing a lot more of that. It's very helpful.
17 Many of our maintenance supervisors don't believe it
18 because this is the way it's always been done. That's
19 been very helpful.

20 COMMISSIONER REMICK: Well, those are
21 always very helpful, yes.

22 MR. CLARK: I think also, and Jack I think
23 maybe addressed in his earlier remarks, the INPO
24 evaluation process now, at every plant for the last
25 I'll say year or more, has had increased focus on

1 maintenance, additional people looking at maintenance
2 and has picked up new techniques. For example, before
3 INPO goes to a plant, they look at the NPRDS data,
4 identify what equipment at those plants may have lower
5 reliability than average and so they use that when
6 they go to the plant to focus on those particular
7 problems and then pull the thread back to wherever the
8 cause might be, including maintenance. So, the assist
9 visit was a one time 12 plant. The evaluations are a
10 continuing, much broader and I think better focused
11 look at every plant in each evaluation.

12 COMMISSIONER REMICK: You introduced my
13 next question and that is on the INPO developed
14 maintenance standard that you proposed to -- and
15 indicate the staff hasn't responded yet. How do you
16 plan to use that or how are you using it? I imagine
17 it would be in your evaluation visits, much like you
18 use similar standards in training in corporate
19 evaluation. Am I correct or wrong?

20 MR. BRONS: That's correct.

21 COMMISSIONER REMICK: Mainly are you using
22 it now or not?

23 MR. BRONS: It is being used now.

24 COMMISSIONER REMICK: It is. Has it
25 demonstrated to be effective based on those

1 evaluations?

2 MR. BRONS: It's used in two ways really.
3 It's used by the utilities in their own self-
4 assessment and identifying areas where they need to
5 improve and then it is used as a part of the INPO
6 evaluation to provide a candid and subjective
7 evaluation of how well they've achieved those
8 individual criteria.

9 COMMISSIONER REMICK: So that's how you
10 would implement or are implementing the standard is
11 through evaluation and self-assessments? Okay.

12 Information provided to us was that as
13 part of the project on maintenance performance
14 indicator that there was a difference between the
15 industry and the NRC on where there were failures on
16 whether one attributes that to maintenance or not.
17 That does not necessarily surprise me. In fact, it's
18 one reason that I was personally not in favor of an
19 enforcement escalation when you had a maintenance root
20 cause because I think people see different maintenance
21 differently. What we call maintenance we think we
22 agree, but when it comes down to it, we don't. It's
23 like what's operations, what's training, what's
24 engineering. We think we know until we start talking
25 about it and find we have differences.

1 My question is has industry tried to
2 uniformly defined what you mean by maintenance? Is it
3 possible?

4 MR. McGRATH: Very difficult in the fossil
5 area. We have a number of fossil plants that have
6 identical equipment. In some plants the equipment
7 runs better than in other plants and it takes the
8 maintenance -- the maintenance is done centrally. It
9 kind of takes the maintenance out of the picture. So
10 you really need to look at the root cause. In another
11 case, because maintenance hasn't maintained the
12 automatic controls and operators got too many things
13 on manual, too much challenge and he makes a mistake,
14 is that an operating error or a maintenance error?

15 I think it's very difficult, in all cases,
16 to pin it down to one specific cause and many times
17 it's a combination of things.

18 MR. CLARK: I'm not aware of any industry
19 effort to develop a common definition.

20 MR. LEE: I guess I would say that the
21 INPO guide in a sense is -- I don't know if it's a
22 definition or if it attempts to embrace the areas that
23 are involved and important to maintenance. I think
24 maintenance in the industry's mind has been in the
25 fact -- and I think that was the difference that came

1 out in the definition of the discussions with the
2 staff on the indicator -- that industry looked at
3 maintenance pretty much as the hands-on, physical
4 repair work and what have you. I think that's
5 broadening considerably in the past, but that
6 guideline takes in other facets. I think as Jack
7 indicated, it's pretty consistent with what the NRC
8 has suggested in the policy.

9 MR. CLARK: I'm not sure myself that a
10 common definition would be that useful as compared to
11 working on making all aspects of the thing better.

12 COMMISSIONER REMICK: I don't know if one
13 could do it either. I'm not suggesting that. I'm
14 just wondering if there has been an effort to define
15 what you mean when you mean maintenance and if we've
16 done it when we've talked about maintenance.

17 MR. BRONS: I think we do it within the
18 individual utilities, Commissioner Remick, because
19 most of us track, for instance, preventative to
20 corrective maintenance ratio, a thing that is actually
21 satisfying and turns out not to work on an inter-
22 utility comparative basis but is useful as a tool. In
23 order to do that, we've had to define within our own
24 organizations where we draw those lines so that the
25 data can be binned to give us something that we use.

1 But collectively, the same problem and the very
2 problem that you referred to, that we're not all
3 viewing it identically.

4 I think we've also concluded that there
5 doesn't appear to be any great benefit from forcing a
6 collective definition.

7 COMMISSIONER REMICK: Well, one of the
8 problems I've always had is I think you can have a
9 very good maintenance programs, but things will fail.
10 Maybe they weren't designed properly with strength or
11 the proper materials or in manufacture and things like
12 that. Now, one can relate that to maintenance, but
13 some people might not relate it to maintenance. So,
14 that's a problem I always see, that you could have
15 good maintenance and you're still going to have
16 failures. I try to maintain my car, but unfortunately
17 things still break on it.

18 MR. COLEMAN: Mr. Commissioner, I was
19 going to comment that in the maintenance effectiveness
20 indicator report done by the industry, we have defined
21 maintenance in the sense of the way that we evaluated
22 it, which was consistent with the definition within
23 the nuclear plant reliability data system defined by
24 INPO so that we had a consistent definition. I
25 believe that that definition, for the most part, is

1 agreed to by the staff. It's when you go to take the
2 next step to actually place a component or evaluate
3 it, as was indicated, that that becomes an
4 interpretive issue.

5 I might mention that in that report, to
6 follow up on your last point, we did identify through
7 a very detailed review of component failures, the
8 percentages attributable to the various categories.
9 If you take 100 percent, and I forget the exact number
10 of component failures we evaluated, but it was a very
11 large number, that 13 percent were attributable to
12 maintenance, 35 percent to the original design, 25
13 percent to manufacturing, and about 8 percent to other
14 factors such as operational factors like Mr. McGrath
15 indicated, and then about a 19 percent category where
16 we weren't sure because from the failure reports from
17 the data, even going back and talking to the
18 individual plants and the maintenance supervisors and
19 mechanics, we couldn't reconstruct that type of
20 information. So there was that uncertainty in there.

21 But we did share that information with the
22 staff in great detail, including these subsequent
23 follow-up evaluations.

24 COMMISSIONER REMICK: I think that's the
25 data that we evaluated and 75 percent were maintenance

1 related.

2 MR. COLEMAN: Yes, sir. That was the
3 starting point.

4 COMMISSIONER REMICK: So it's obvious we
5 have differences in definition.

6 Moving along, you mentioned that the
7 diesel generator reliability was greater than 0.98.
8 Was that for all plants or was that a median or
9 average or --

10 MR. BRONS: That's average.

11 COMMISSIONER REMICK: So, were there some
12 plants below .95?

13 MR. BRONS: No, sir.

14 COMMISSIONER REMICK: All above --

15 MR. BRONS: If there are any, I'm not
16 aware of it because all of us have made a commitment
17 and the lowest commitment that was tolerated in the
18 station blackout rule was 0.95 and I'm not aware that
19 anybody has fallen below that.

20 COMMISSIONER REMICK: Mr. McGrath, you
21 suggested we should have a priority system, but that's
22 not very specific. Did you have anything in mind on
23 how we establish -- one system of priority, first
24 come, is what you consider. That can be somebody's
25 priority system. Is it risk based, is it judgment

1 based? Do you have anything specific in mind when you
2 suggest that we should have a priority system?

3 MR. McGRATH: As managers, we all have to
4 prioritize our work. I think what concerns us is we
5 have this list of 57 issues that could be called
6 "priorities." But there's too many of them to focus
7 on and prioritize. I think what we need to do is
8 agree neutrally that these are the issues to work on
9 and have some kind of a plan to bring them to closure.
10 What happens is when we go -- carry these things
11 along, there's someone in the plant or someone in the
12 company or some group of people in the company that
13 are continuing to keep up to date on these issues and
14 monitor them and whatever. That distracts, it seems
15 to me, from better uses of their time.

16 COMMISSIONER REMICK: I understand that,
17 but I wondered if you had a specific suggestion when
18 you suggest we have a priority system, on what it
19 should be based on.

20 MR. McGRATH: Well, some of these items
21 are on the list and we call them our priorities. But
22 we think they would need to be closed. I would guess
23 maybe 25 percent or maybe more, Byron, of that list?

24 MR. LEE: Right.

25 MR. McGRATH: And that would allow us to

1 free up some resources, focus on the others and get
2 those done. I think that's part of what we ought to
3 get together on, what's a good priority system. And
4 once we agree on that, work to get it done.

5 COMMISSIONER REMICK: Okay. One final
6 comment, the discussion on tech specs. Commissioner
7 Curtiss and I were just earlier this week talking a
8 little bit and I was relating some of my past history.
9 When tech specs were first being developed, I was in
10 charge of a test facility and Marvin Mann at the NRC
11 was the one handling that effort. I remember in those
12 discussions I know we visualized tech specs as being
13 six or seven pages of very important measurable
14 parameters that an operator would be able to measure
15 and observe and say, well, we're within tech specs or
16 not.

17 Now, I realize that that was somewhat of a
18 very naive approach, but in the early days when we
19 talked about tech specs, that's what people had in
20 mind, at least operators had in mind with tech specs.
21 Later on, when I did operator licensing exams,
22 especially for SROs and got into tech specs, I became
23 aware that they are not comprehensible, understandable
24 to operators. They're very operator incomprehensible.
25 So, I appreciate what you're saying. I realize that

1 my, as I say, early approach to tech specs is pretty
2 naive, but I agree that it is something that we should
3 continue to work on because from an operator
4 perspective, especially in time of any kind of
5 immediacy, trying to figure out where in the tech
6 specs it's covered and is it only covered once and
7 what's the information, that's extremely difficult.
8 So, I certainly agree with your sense of that needs
9 continuing attention.

10 Thank you, Mr. Chairman.

11 MR. CLARK: Could I comment just a
12 minute --

13 COMMISSIONER REMICK: Yes. Yes.

14 MR. CLARK: -- on your priority question?
15 I may be speaking only for myself. First, I think the
16 industry has reached the point where it is very
17 unlikely that a newly emerging issue is of imminent
18 safety significance and needs to be on the list and
19 being worked on right now. One way to get at this is
20 to focus on the things already on the list and close
21 them out because each time we add one to the list,
22 somebody starts working on it and maybe that's an
23 aspect of not closing out the older ones.

24 Now, if you truly came up with a new
25 revelation threatening to safety, obviously everybody

1 dives on it. But the industry at the stage it's at, I
2 don't believe there are many of those. So, maybe we
3 could help ourselves if we put priority on closing out
4 existing issues, accumulate the others, but not start
5 putting effort on them until we get the old ones
6 closed out.

7 COMMISSIONER REMICK: Thank you, Mr.
8 Chairman.

9 CHAIRMAN CARR: Commissioner Curtiss?

10 COMMISSIONER CURTISS: I have a handful of
11 questions as well. Let me pick up on a couple of
12 points that Forrest raised.

13 First on the priorities question, and I do
14 think that's an important question for us as an
15 agency. It's been identified in the regulatory survey
16 that we've recently conducted. The initiatives that
17 the staff has proposed to address that concern, I
18 think, involve some very positive efforts that I
19 encourage you to comment on, particularly what's
20 referred to as the IRRIS effort to integrate
21 requirements.

22 I guess I've been disappointed over the
23 years that some of the programs that we've had in
24 place, such as ISAP and integrated schedules and so
25 forth, haven't seemed to provide the proper vehicle or

1 an acceptable vehicle for getting after this question.
2 So, I urge you as an industry and the individual
3 licensees to comment on that survey when it is
4 published here soon, because I do think that's one of
5 the areas that we could focus some attention on.

6 Let me ask you, on your list here, I see
7 you've alphabetized your priorities here, 57 of them.
8 Let me ask you to name what you think are the top
9 three priorities on this list.

10 MR. BRONS: Okay. We actually went over
11 this this morning a little bit.

12 Joe, why don't you run through that list.

13 MR. COLEMAN: All right, sir. Maybe by
14 way of not answering your question initially but
15 coming to the final answer, let me indicate that this
16 list is a combined list of two groupings that we
17 utilized to try to get at where to focus the resources
18 of not only the NUMARC staff but where the industry's
19 resources need to be focused. The criteria that we
20 used to evaluate where an issue falls includes items
21 such as its importance to the industry, its importance
22 to safety, obviously, reliability, economics. But
23 also there's an element of -- two other elements that
24 are important, one being whether or not these issues
25 can be closed out by the involvement of the senior

1 management within the industry. That's an involvement
2 area that I believe we've provided these examples to
3 you previously in this discussion of the
4 prioritization system.

5 The other one has to do with timing,
6 whether or not this issue needs the active and
7 resources of the industry being applied to it
8 currently. So, what we have is a lot of movement
9 between four levels of priority of generic issues that
10 we are addressing that transgresses this, transgresses
11 the various lists, depending upon the point in time of
12 closure.

13 So, maybe by way of example, station
14 blackout was on the top of the list. We're expending
15 significant resources on that. It's on this list, but
16 if you really looked at our specific detail list you'd
17 find it's at the second level down of monitoring
18 because we've completed the interactive at work with
19 the staff and we're not in the process of implementing
20 those actions throughout the industry. So, just from
21 that perspective, it's very difficult to pick the
22 top --

23 MR. BRONS: Joe, why don't you scan down
24 the list and just --

25 MR. COLEMAN: If I could give you a couple

1 of examples, perhaps. Access authorization is an
2 issue which we believe was closed out by the industry
3 in 1986 and we're still awaiting action by the
4 Commission.

5 CHAIRMAN CARR: How can you list it as a
6 major issue if you think it's been closed out?

7 MR. COLEMAN: Because within the industry,
8 Chairman Carr, it is still causing uncertainty across
9 the industry --

10 CHAIRMAN CARR: Uncertainty and a major
11 issue are two different things.

12 MR. COLEMAN: But it's still requiring a
13 dedicated amount of resources, interaction with the
14 staff. We continue to expend significant industry
15 resources on trying to define what access requirements
16 are acceptable for entry into unescorted access of
17 nuclear power plants. We still have that issue as a
18 major issue affecting the industry that requires
19 closure.

20 MR. LEE: And it creates a problem for the
21 industry in individual utilities in what their program
22 really should be.

23 CHAIRMAN CARR: Problems and major issues
24 are two different things, in my opinion.

25 MR. LEE: Major issues would be safety

1 types of issues in your opinion?

2 CHAIRMAN CARR: It was his question. I'll
3 give you the major issues on that list if you want my
4 opinion.

5 COMMISSIONER CURTISS: I see you have the
6 same difficulty explaining how you set priorities that
7 we sometimes do within the Agency. Let me ask it
8 differently though. If you were to suggest which
9 three issues on this list we as a Commission ought to
10 spend our time on and focus our effort on and provide
11 the top down and the emphasis that you've talked about
12 here in a number of earmarks. I can give you my
13 three, but I want to hear your three. I know what
14 we're spending our time on.

15 CHAIRMAN CARR: Well, I want to see if we
16 can agree on three.

17 COMMISSIONER CURTISS: Right.

18 MR. COLEMAN: The issue that I would say
19 is the first and foremost issue for the Commission to
20 address is the one on the second page entitled,
21 "Regulatory Environment and Impact." That was the
22 focus of most of the comments and that's the area that
23 I believe we are expending most our energy and efforts
24 within the industry. The issue of standardization,
25 licensing reform, I would consider it also at the top

1 of the list. The third issue would be that of license
2 renewal from an overall industry and national
3 perspective --

4 CHAIRMAN CARR: You got three of my four
5 anyway.

6 COMMISSIONER CURTISS: You had two of my
7 three.

8 MR. COLEMAN: Okay.

9 COMMISSIONER CURTISS: Well, that's
10 helpful to know. I realize that this -- I know how
11 these lists get made up when organizations get
12 together and everybody puts their own issues on the
13 list that they're working on or of concern to them
14 without perhaps the same prioritization within each
15 organizations. But it's helpful, I think, to know.
16 As I say, I would have listed advanced reactors,
17 license renewal as two of the three issues on the
18 list. There are others here that are obviously taking
19 a good deal of our time as well, but it's helpful to
20 know from your perspective what you think the top two
21 or three issues are of these 57.

22 MR. LEE: Commissioner, let me make a
23 point though that Phil was making, that those are
24 maybe from a broad general industry perspective, the
25 issues. But I think from the impact on the operations

1 and the day by day of the plants and what have you, I
2 think Phil's point was some of these issues that have
3 been around a long time need to come to closure. I
4 would put the tech spec program we were talking about
5 in that. I think another --

6 MR. CLARK: How about Commission detailed
7 involvement, maybe some kind of agreement that
8 looks -- set a goal of shortening the list?

9 CHAIRMAN CARR: Well, the tech spec
10 improvement program, we've all waited a long time for
11 the you know who to come in and now we've got to get
12 it back out. It isn't as if we've been ignoring that.
13 As you've said, it takes time to make effective
14 changes to programs. Your schedules that you come in
15 with on what you're going to do over a long period of
16 time, to me, I don't see why they should take three or
17 four outages, but I don't argue about it. It seems
18 like a long time. I'm sure it seems like a long time
19 for us to do what you want to. Tech specs haven't
20 been where we could change them, in my opinion.
21 They're there now, but I'm not sure --

22 MR. BRONS: Chairman Carr, if I might add
23 though, I understand the point that you made about
24 major issues and problems. But I would add, just this
25 access authorization thing, it's been hanging open for

1 a long time. It is not a significant safety issue,
2 but when our station manager has to get involved in
3 determining who or who cannot gain access to the
4 station, his attention is being diverted from the safe
5 operation of the reactor and it's an issue that should
6 be closed. We need to deal with it one way or another
7 and then get on with it.

8 MR. McGRATH: It's not something that's
9 benefiting from more time.

10 CHAIRMAN CARR: You can separate out of
11 that list those issues that you think should be
12 closed, then I have no problem with that. But those
13 issues certainly -- if you think it should be closed
14 already, you're not putting much "massive utility
15 effort" into it. The effort that's putting into it is
16 NUMARC's leaning on us to close it probably. It
17 causes you some problems at your plant. Okay. I
18 acknowledge that. But --

19 MR. BRONS: That's the one place we don't
20 want to have problems occurring.

21 MR. McGRATH: That's an important place.
22 It comes down to the plant manager and all of these
23 things funnel through the hourglass into his head. If
24 he spends ten seconds on this, it's more than I think
25 he ought to spend on it. He ought to be spending more

1 time in watching the operation. If you add these all
2 up, it comes out to significant time.

3 COMMISSIONER CURTISS: The second comment
4 that Commissioner Remick had that I'd like to pick up
5 on is this question of how you define maintenance. Of
6 course, I've taken a look at the industry's comments
7 on the maintenance effectiveness indicator and the
8 disagreement between 13 percent and 70 percent or
9 whatever the numbers are. I don't want to pursue that
10 in a lot of detail, but I guess I'd just toss out for
11 your comments. It does seem to me that the discussion
12 that we're going through right now on the so-called
13 big M, little M question rings very similar to the
14 kind of discussion we went through on QA a number of
15 years ago when the early focus on QA tended to be very
16 localized and compartmentalized and when it led to
17 what I think were a number of problems as a result of
18 the narrow focus on what one considered to be QA. Of
19 course, we all know how QA has evolved over the years
20 and become an integrated part of everybody's
21 department and responsibility within the plant.

22 Is it, in the case of maintenance, a
23 comparable situation where we are perhaps at an
24 earlier stage of a compartmentalized focus on
25 maintenance that is evolving into a broader

1 appreciation that maintenance is everybody's
2 responsibility in the plant?

3 MR. BRONS: Absolutely. We have for some
4 years seen the very important role that chemistry
5 plays in maintenance. Maintenance issues, the
6 criteria deal with the radiological impacts of
7 maintenance, the engineering involvement of it. So,
8 it's precisely as you define. Everybody sees
9 maintenance as a part of their responsibility. That's
10 the way the programmatic efforts are going. The
11 individual programs that some of our initiatives deal
12 with, things as small as what kind of material is used
13 in O-rings to improve reliability, but the total scope
14 is to bring all these departmental activities together
15 and say, "We understand we're all in maintenance
16 together."

17 MR. CLARK: I would suggest that calling
18 it maintenance may not be helpful and that if we all
19 thought about equipment reliability, which depends on
20 chemistry, design, how it's operated and how it's
21 maintained, that that might help the broader focus.

22 COMMISSIONER CURTISS: I do. In fact,
23 that was the next question I was going to ask on
24 maintenance. I do appreciate the time that you spent
25 talking about what you're doing on the reliability

1 front. I happen to concur in the remarks and the
2 emphasis that you've given that, that to the extent
3 that you're talking about a results oriented
4 reliability based approach where we look at the end
5 products, citing the diesel generator for example as
6 one instance, has a lot of merit in this area.

7 I will say that as I've gone around the
8 country I've been to plants that give me a puzzled
9 look when I ask them what kind of RCM program they
10 have, not knowing what the acronym stands for. I do
11 think there's a great deal of variability within the
12 industry. Some plants, including the two that you
13 mentioned, San Onofre and Ginna, have been very active
14 and up front in terms of participating and I'm pleased
15 to see the effort on that front that is beginning to
16 come about.

17 The one area I guess where I did have a
18 question really focuses on the key -- what I consider
19 to be one of the key elements of an approach like that
20 and that's the ability to gather all of the data on
21 your systems and components. The question has to do
22 with what you're doing on NPRDS. You talked about a
23 couple of things that you're doing to improve
24 activities, including the extension to balance of
25 plant for the 80 or so components, I think you said,

1 which I think is a very positive move. I'm pleased to
2 see that.

3 In staff's annual look at that program, I
4 think they identified what I recall were three areas
5 of potential for improvement. There continues to be,
6 I think, a wide variability in the reporting from
7 utility to utility, first. Secondly, they indicated
8 about 60 to 70 percent of the component failures are
9 being reported, so there's not a complete reporting of
10 component failures. Then third, the timeliness
11 question, the question of whether information comes in
12 immediately or sometime after the guidelines. Can you
13 say a little bit more on what you're doing in those
14 particular areas?

15 MR. BRONS: Yes, sir. Let me address all
16 of those areas.

17 As you recited, we have extended it
18 further into balance of plant. That was based upon
19 cumulative outage time in the industry over the last
20 six years or components that caused 12 or more outage
21 events. I think it was 12 or more outage events in
22 the same period of time. There is another revision of
23 the NPRDS guidelines that are directed specifically
24 towards improving the reportability and tightening the
25 definitions of what were reported. So, INPO issued

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1 early this year revised guidelines which all the
2 industry -- the whole industry is now committed to
3 implement. I think the implementation is due to be
4 completed in April of '91 or thereabouts. I think we
5 have the date. What that is is really simplified
6 schematics broken up by the four NSSS vendors that
7 identify which relays and components and so on that
8 we're looking at, so that we're reporting on the same
9 kinds of equipment. So, that's being done.

10 Relative to the totality of reporting,
11 that's been a -- that and really the timeliness have
12 been a focus of specific INPO looks in their normal
13 evaluation process. Now, industry has been asked to
14 commit to get the timeliness down to under 60 days for
15 any report. That commitment has been made and I think
16 it's due to be in place by December of this year, and
17 INPO is checking that. I can attest to the fact that
18 they're checking that when they come. They're also
19 checking on the completeness of reporting as part of
20 their normal evaluation process. But we've been
21 advised by INPO that that needs to be improved.

22 So, those three specific areas, I think,
23 address your --

24 COMMISSIONER CURTISS: Well, I'd encourage
25 you to -- that's a key system. In fact, as I looked

1 at the maintenance effectiveness indicator, it seemed
2 to me that the principal reason that our staff
3 concluded that it couldn't be used effectively was
4 that the ability to make plant-to-plant comparisons
5 was impaired by the fact that the reporting isn't
6 consistent and it isn't complete. It may be a
7 database problem as much as it is an inherent problem
8 with the indicator itself.

9 Two other quick areas I guess I'd like--
10 go ahead, Joe.

11 MR. COLEMAN: Might I comment on that? I
12 think that the -- at least from my view, the major
13 area of disagreement and the reason that the NPRDS
14 database could not be used had to do more with the
15 fact that the database would require major revisions
16 to the way the causing coding was done and the in-
17 depth root cause analysis prior to reporting that
18 would have to be accomplished to make it an effective
19 use as an effective indicator. As a result, the
20 concern that we have, and I believe that's shared by
21 the staff, would be that that would then affect the
22 actual reporting to NPRDS. So, there's a cause and
23 effect relationship that we think is inappropriate --

24 CHAIRMAN CARR: Let me piggyback on that
25 for a second. When you say that you came out with 80

1 percent where design manufacturing are unknown, you
2 didn't go by these guidelines. All those that are in
3 here is maintenance related.

4 MR. COLEMAN: Well, yes, sir. I think
5 that's the definition of -- when we went back, what we
6 did to define it --

7 CHAIRMAN CARR: These guidelines and our
8 policy statement are pretty much in agreement. What
9 you guys came out with in the results of the
10 effectiveness indicators is completely different than
11 that.

12 MR. BRONS: But, Chairman Carr, I guess
13 we're going again to are we working on a problem that
14 we can solve with station forces that really promotes
15 the reliability and effectiveness of maintenance at
16 the station. Design is a maintenance related problem.
17 There's no question about it. Wear out is a
18 maintenance -- if the light bulb goes to failure,
19 that's a maintenance problem and most of us decide to
20 let light bulbs fail rather than replace them before
21 they fail. But we wanted to categorize --I think we in
22 the industry are trying to focus on those things that
23 we with our station forces and the resources that we
24 have at hand can make an impact on the ultimate
25 reliability of the equipment.

1 CHAIRMAN CARR: Yes, but that's
2 reliability centered maintenance, which is not a new
3 term. You all have been playing with this -- I mean
4 you've had the records for 30 years and nobody has
5 focused on reliability centered maintenance until
6 recently.

7 MR. BRONS: I really think that's not
8 correct. We have. There is a tendency on the part of
9 many people to assume that an industry hasn't focused
10 on something unless there is a very well documented
11 program. It's, I suppose, a philosophical question.
12 If you have supervisors that have been running the
13 program for a number of years and they are gearing
14 their maintenance -- where we have latitude to gear
15 our maintenance frequency and so on -- to the things
16 that they have known to fail with some routine and
17 they're keeping up with that. That's reliability-
18 centered maintenance.

19 Now, if an inspector, whether it be an
20 industry inspector or a management inspector or a
21 regulatory inspector, comes in and says, "How do you
22 know that?" and he says, "I know that, because I've
23 been working here for 15 years," that may -- it's not
24 always an acceptable answer because you don't have the
25 engineering background and so forth. So, I really

1 think there's been more of that going on.

2 CHAIRMAN CARR: All he needs is to produce
3 the machinery history to show that.

4 MR. BRONS: Well, I think most utilities
5 have had machinery histories.

6 CHAIRMAN CARR: Whether it shows that or
7 not.

8 MR. BRONS: They were hand-held or hand-
9 written and they had all the flaws that those kinds of
10 things had. I also think that most utilities now are
11 moving to computer-based records systems which will
12 improve the visibility behind those decisions.

13 COMMISSIONER CURTISS: Two other
14 questions. Can you tell me -- you're going to
15 establish your indicator goals for 1995. One
16 particular that I guess I had a question, can you tell
17 me how you're merging what you're doing in that area
18 with the WANO indicators that you referred to?

19 MR. CLARK: The indicators are the same.
20 I think there's now agreement that INPO and WANO will
21 use the same set of indicators, and the process is
22 that they were all given those indicators six months
23 ago and asked to submit our '95 goals. We did that.
24 INPO in many cases kind of averaged them out to get an
25 industry indicator, in two or three cases thought that

1 they ought to adjust it. Those are back to us all now
2 for comment and to reassess our own goals.

3 So, the indicators are defined. They're
4 common. And, within I think the next month there's
5 going to be a setting by INPO based on all the input
6 they got from the industry. It's the same process --

7 COMMISSIONER CURTISS: The goals will be
8 domestic. Will there be any world-wide goals, or is
9 it going to be country-specific?

10 MR. CLARK: Not that I'm aware of.

11 MR. BRONS: I'm not aware of any world-
12 wide goals. We do get reported to us world-wide
13 information. Some of it's limited. Really, the
14 indicators will stay the same, but there have been
15 some subtle changes in the definition, how the
16 statistics are compiled in order to satisfactorily
17 merge with I think it's the UNIPED system of
18 indicators that was in place in Europe. And, there's
19 been world-wide agreement on that now, which caused
20 some give and take on both sides in the definitions,
21 but I think in the long-term you'll look at them and
22 view them as portraying exactly the same information.

23 COMMISSIONER CURTISS: Okay.

24 MR. COLEMAN: I think you saw from the
25 demonstration of performance improvements, the two

1 graphs that Jack Brons indicated; one, the equivalent
2 availability factor, which was domestic; and when we
3 had to compare ourselves internationally we had to use
4 capacity factor because we didn't have equivalent
5 availability factor data. It was not being kept
6 internationally. So, I think from 19 -- starting next
7 year from this point forward with this agreement
8 through WANO and INPO and UNIPED that we will now be
9 able to be able to compare world-wide.

10 COMMISSIONER CURTISS: One final question.
11 I recall two or three years ago there was some
12 discussion within the context of NUMARC about how you
13 all go about verifying utility compliance or
14 conformance with various NUMARC initiatives. In an
15 area like procurement where NUMARC is laying out some
16 steps that it would like to see the utilities take,
17 can you expand upon what sort of verification process
18 you use to track utility conformance with the various
19 industry initiatives?

20 MR. LEE: Well, one of the things, at
21 NUMARC we do not have any enforcement or compliance
22 authority as such. But, what we've done in most cases
23 is through surveying ask a survey of the individual
24 company as to what their status is on implementation
25 of initiatives or on particular aspects of it. Many

1 of the activities eventually end up a part of the INPO
2 evaluation program, although they don't specifically
3 evaluate the NUMARC initiatives.

4 And, in many cases, I guess the feedback
5 is through the NRC inspection programs on the
6 implementation, and I think in the long run,
7 Commissioner, that's the mechanism that we need to
8 create between ourselves, not to evaluate or inspect
9 by the NRC our initiatives as such, but to evaluate
10 and assess, as I believe you're going to be doing in
11 the procurement area, to assess whether the changes
12 that have been made as a result of our initiative are
13 in fact improving the programs to satisfy your
14 requirements.

15 COMMISSIONER CURTISS: Okay.

16 MR. CLARK: Essentially, I get a letter
17 from NUMARC saying, "Have you implemented?" and then I
18 write back and say whether I have or have not, and if
19 I have not, when I will. So, there is a reliance on
20 the utility management for the data. At the same
21 time, I think there's good understanding in the
22 industry that if we don't implement we're undercutting
23 the whole industry and NUMARC as well, so I think the
24 replies by the utilities are taken seriously. I know
25 we do and I'm sure everyone else here does.

1 COMMISSIONER CURTISS: Okay. Thank you.

2 CHAIRMAN CARR: Commissioner Rogers?

3 COMMISSIONER ROGERS: Yes. Coming back to
4 your major issues list, lists like this are
5 interesting but not very useful as they stand.

6 First, it's an apples and oranges
7 collection of items. You know, when you were asked
8 what do you think are most important, at least Joe
9 thought regulatory environment and impact. Maybe you
10 could put that at the top of the list and everything
11 else as a subtopic under it.

12 And, I don't know what FEMA guidance and
13 FEMA user fees have to do with NRC. I mean, maybe
14 they do have something to do. I don't know what they
15 have to do with us.

16 So, I would say that it's an interesting
17 list because it reveals the kinds of things that are
18 irritants, the kinds of things that are major and the
19 kind of things that you want to call to our attention
20 in some way, but it's not very useful as it stands,
21 because what do you do with it?

22 And, it would seem to me that we ought to
23 try to look at a way of acting on these things in some
24 sensible way and prepare from this list, develop some
25 mechanism for preparing from this list, first, some

1 categories that subsume some of these things or put
2 them together and then to try to get a prioritization
3 once you have some sensible categorization, because
4 this is just a scatter gun here of all kinds of
5 things, some that are big, some that are small, some
6 that will never disappear. Human factors is always
7 going to be an issue of some sort. We'll never close
8 that one out entirely, in my opinion, as long as we
9 have people around.

10 So, some can be closed. Some are open
11 issues. You know, in a certain sense I think that
12 it's not very useful as it stands, although it's
13 interesting to see it, but why not try to come up with
14 some way of dealing with these things and getting them
15 closed out?

16 It's very interesting for us to hear about
17 some of these things like access authorization. I
18 don't think we ought to be dealing with that at a
19 Commission level. Frankly, it seems to me that's
20 something staff ought to be able to handle, but if it
21 isn't being dealt with then we ought to know that it
22 isn't being dealt with and that there are issues that
23 aren't being dealt with that could be.

24 So, my comment here is that it would seem
25 to me that some mechanism ought to emerge in which you

1 and our staff get together and categorize such a list
2 as this into some sensible categories and then within
3 those categories begin to set priorities, because as
4 it is the priorities I don't think can be sensibly set
5 within this list. I think that one has to first do
6 some more work with it.

7 MR. COLEMAN: Mr. Commissioner, if I might
8 comment on that, I fully agree with you. And, I might
9 add that the list was not intended to give you a sense
10 of what issue is a higher priority than another issue.
11 It was more intended to give you a feeling of the
12 scope and depth of the industry effort to try to close
13 out these issues, and the other aspect or comment on
14 the list is that it does go beyond NRC. It includes
15 EPA and FEMA issues which are having a major impact on
16 the nuclear industry.

17 The real focus of this list, however,
18 comes five or six times a year when we have our NUMARC
19 issues management committee, which is about 17 senior
20 executives in the industry along with the
21 representatives from the NSSS and the vendors and the
22 owners groups as well as INPO and EPRI, to try and
23 come together to develop a strategy to figure out how
24 we can bring these issues to closure, and that is a
25 continuing effort that we have been utilizing from the

1 early days of NUMARC both as a committee and as a
2 council.

3 And, I agree with you. We need to get
4 together with the staff and identify those issues that
5 we can in fact bring to closure. We have been
6 attempting to do that. We've had significant
7 interactions on many of those issues and we have still
8 yet to be able to bring them to closure, so we will at
9 least from my perspective work to try to attack those
10 in a way that we can bring them to an end.

11 COMMISSIONER ROGERS: Well, the next time
12 we hear from you I'd like to know what happened to
13 this list --

14 MR. COLEMAN: Yes, sir.

15 COMMISSIONER ROGERS: -- and what you've
16 tried to do and what we've tried to do.

17 CHAIRMAN CARR: They won't bring it up
18 again.

19 COMMISSIONER ROGERS: No, no. I'll bring
20 it up again.

21 MR. COLEMAN: We will.

22 MR. CLARK: Given that request, we
23 certainly will.

24 COMMISSIONER ROGERS: I think that it
25 ought to be able to close some of these things out,

1 and if they can't be closed out then there's got to be
2 some kind of sticking point that maybe we ought to
3 understand better what that sticking point is, whether
4 it's a lack of resources, whether there's a technical
5 issue that simply can't get resolved or whether
6 there's a real difference in point of view that we
7 can't seem to bring it to a closure. So, at any rate,
8 I would hope we could deal with many of the items on
9 this list and get them closed out, but some of them
10 will never be closed out.

11 The other comment or question that I have,
12 Mr. Brons, in your presentation you made the point
13 that it's not possible to quantitatively measure the
14 quality of maintenance itself, so I was trying to
15 understand what your thinking is, then, on this
16 project, this EPRI project that's listed in your
17 industry action plan that you updated on September
18 1st.

19 In support of maintenance efforts, EPRI is
20 currently developing a method that utilities can use
21 in the application of quantitative maintenance
22 monitoring techniques. The method will be evaluated
23 at two host utilities to assess its effectiveness and
24 usefulness, and then that is item 4(a)(3), provide a
25 test and test a method for the application of

1 quantitative maintenance monitoring techniques for a
2 one year period that EPRI has responsibility for.

3 Can you say something to that? How do
4 these two fit together?

5 MR. BRONS: Well, sir, as I indicated to
6 you in my remarks, we haven't given up on trying.
7 We've run into a stone wall at every turn, but indeed
8 we're looking still at preventative maintenance,
9 amount of rework, repetitive failures, availability of
10 spare parts, outage durations, post-maintenance
11 testing issues, supervisory involvement, productivity,
12 all of those areas to find out if we can make some
13 uniform measurement.

14 I mentioned that all the utilities were
15 asked for the things that they use both analytical and
16 anecdotal to evaluate maintenance. We've submitted
17 that to INPO. INPO has collated it. I think I
18 indicated that the guidance would follow. They have
19 distributed it back to the industry and said, "Here's
20 what you all have told us, but we're still working
21 over it. Is there something there that we can use
22 uniformly to do that?" And, EPRI is working on that
23 as well. So, what that represents, I think most
24 fairly said, is a continuing effort to try and do it,
25 but we haven't found a magic answer yet.

1 MR. CLARK: I think there might also be a
2 difference between an indicator which, when you watch,
3 is it up, down, or level, causes you to go look into
4 it and see what's happening. I think we believe -- at
5 least I do and I think many others -- that you can
6 define indicators which will cause you to go look, and
7 you try to find one or a few which will tell you is it
8 good, bad, or indifferent or which give you the
9 answer. I think that's where there's been no real
10 success and some people feel there won't be. And, so,
11 I think EPRI is aimed at the first part of that, which
12 is some things you can keep an eye on and help you
13 focus where you look to see what's going on.

14 MR. COLEMAN: Mr. Commissioner, as I
15 understand it, the main focus also of the EPRI effort
16 is to identify ways to measure maintenance
17 quantitatively, but with a focus on use by individual
18 stations or by companies, not to try to go the next
19 step beyond that which is to see if we can compare the
20 same types of quantitative methods between utilities
21 or across the industry. That may fall out of that
22 process, but the main focus of it has been to provide
23 assistance to the individual utilities as, I believe,
24 is the INPO --

25 MR. BRONS: Let me give you a concrete

1 example of that. One of the things that's come out of
2 the INPO study that's being worked on by EPRI as a
3 technique to manage maintenance on a station is to
4 look at the items which have had the most repeat
5 failures at that station. Now, if the maintenance
6 process works well, those things will work their way
7 off the list and not reappear, but you're always going
8 to be having a list of things that have the highest
9 repetitive failures. It doesn't lend itself to any
10 inter-utility comparison, but it does help the
11 utility, rather than have that information be buried
12 away, bring it up to a level where management can say,
13 "What are we doing? Why is such and such a heat
14 exchanger developing leaks once a quarter?" or
15 whatever and bring those things to resolution at a
16 station.

17 COMMISSIONER ROGERS: I see. So, your
18 thought is that this might be something that would be
19 applied differently in different stations?

20 MR. BRONS: Yes, because they'll be
21 dealing with what their problems are.

22 COMMISSIONER ROGERS: Well, it seems to me
23 that's a very useful approach. My own feeling on
24 maintenance always has been that it is very plant-
25 specific because of the very large differences in

1 designs and equipment that the plants have, that it's
2 very difficult to have the same kind of snap-shot look
3 at every plant for comparisons that would make sense
4 but you can look within individual plants.

5 Returning to this question, I think we've
6 got a real serious problem here in this question of
7 definition of maintenance, because the maintenance
8 policy statement that the NRC put together a year or
9 so ago and the documents that INPO have come out with
10 on maintenance have not been very different at all.
11 We've all seen that. We've seen that most people say,
12 "Well, they're basically identical. There's very
13 little difference between them." Yet, when groups of
14 NRC staff and groups of industry people get together
15 to try to look at issues like an indicator or so on,
16 suddenly the difference in definition of maintenance
17 becomes very, very apparent, very big difference.

18 So, you know, at this level, our sitting
19 around this table level, we can seem to agree on what
20 we're talking about when we come to maintenance. When
21 we start to work it down to the working level in some
22 way, we get into other problems. Something is not
23 maintenance because it's not defined to be maintenance
24 within the organizational chart and therefore it's not
25 attributable to the maintenance people and therefore

1 they can't be held responsible. Well, that's an issue
2 that, as far as I'm concerned, we shouldn't be arguing
3 about. That's something within the organization. You
4 have to decide who's going to deal with these things.
5 Is the overall performance good or not?

6 And, the kinds of looks at it and concerns
7 that we expressed here are very broad. They involve
8 all of the organization. They involve the engineering
9 department. They involve almost all aspects of the
10 organization. That's been partly a concern of the
11 industry that it's such a broad approach.

12 Yet, we recognize that there are so many
13 elements involved in actually keeping the plant in a
14 good condition that may not have a maintenance label
15 on them -- that's the big M, little m distinction that
16 Commissioner Curtiss was referring to -- that we
17 really need to talk and understand this a little bit
18 better, because I can see impasses developing over
19 really a fundamental difference in what we're calling
20 maintenance and what we're not calling maintenance.
21 But, we want the same thing in the end, good reliable
22 performance.

23 And, Mr. Clark suggested, well, maybe we
24 shouldn't be calling it maintenance. Well, maybe
25 that's part of the way around what looks to me to be--

1 I wouldn't exactly call it a semantic roadblock. It's
2 more fundamental than that. But, it's an approach to
3 getting to the end, which is a very reliable system
4 that the operator can rely on. To me, maintenance is
5 everything that takes place in the plant such that
6 when the operator calls on the equipment it behaves
7 the way it's supposed to behave. That's a little
8 simplistic.

9 MR. CLARK: You're fighting a hundred
10 years of power plant experience and probably Navy and
11 everywhere else where maintenance is not -- the term
12 isn't used that broadly.

13 COMMISSIONER ROGERS: If we can give it a
14 new name and get around that hundred years of
15 experience on what you call maintenance and what you
16 don't call maintenance, if that's the impediment, then
17 I think we ought to look for a solution that gets
18 around this because it seems to me where there's blood
19 on the floor here on this issue of what's maintenance
20 and what isn't maintenance and that's not the issue.

21 MR. BRONS: Commissioner, I would suggest
22 that, no matter what we call it, one of the points
23 that I was trying to make is why are we concerned,
24 whatever label we give it.

25 Looking at the overall indicators,

1 availability is up. The industry projects that it
2 will meet its scram reduction goal of one and a half
3 scrams a year. Radiation exposure goals for '90 were
4 met a couple of years ago. Rad waste goals have been
5 met for both boiling water and pressurized water
6 reactors. Indeed, seven of the ten long-term goals
7 set by the industry which measure overall performance
8 in 1985 are going to be met in 1990.

9 CHAIRMAN CARR: Well, but your equivalent
10 availability factor doesn't look like it's going to be
11 met.

12 MR. BRONS: No, sir, but --

13 CHAIRMAN CARR: Which we all recognize is
14 a real indicator of maintenance.

15 MR. BRONS: -- there I point out that the
16 industry's achievement, which I recognize has fallen
17 short of the goal -- it was a very aggressive goal.
18 What we have done is come into consistency with the
19 best in the world, and we need to understand where the
20 limits are and where the goals should be properly set.
21 Five years ago, that was not the case. There's been
22 significant progress made in that area, although it
23 fell short of the goal.

24 COMMISSIONER ROGERS: Well, let me just
25 say something to that. We've seen in this industry

1 that, within something like a five year period or a
2 little bit more, very good performers can stumble and
3 become poor performers. I'm not talking about just
4 maintenance. We've seen it happen.

5 And, I think the concern that I have with
6 respect to maintenance is yes, all the trends look
7 good. What's going to guarantee that they'll stay
8 good? You can say, well, time will demonstrate that.
9 I then say, well, all right, that's something, but
10 what will tell us that we're starting to go off, that
11 we're starting to slip before you see it in the gross
12 indicators of capacity factor? Once you see it there,
13 it's going to take a long time to get fixed. Once you
14 see the impact of a poor maintenance program on
15 capacity factor, I think you're going to have some
16 very serious problems that will have to be dealt with
17 and it won't be easy to fix them. It will take a long
18 time.

19 So, the quest has been for something that
20 tells us that the system is beginning to slip, go and
21 look, the kinds of things you were telling me this
22 EPRI program is searching for. I would like to have
23 some confidence that that kind of activity is in
24 place, not just that the overall gross performance is
25 going up because it's taken a long time to get it to

1 come up and it may take a long time for it to fall
2 off, even though rot is setting in in some places.

3 So, I would -- these are the things that
4 give us a concern and these are the things that -- in
5 answer to your question why is the Commission
6 concerned about this, those are the reasons I'm
7 concerned about. Yes, it looks pretty good, but how
8 do we know when it's going to start to slip off and
9 what will be the mechanisms that keep anybody from
10 slipping too far away from a good performance as we
11 all seem to agree we're heading towards a good
12 performance now?

13 MR. BRONS: I think in my own instance, I
14 can only answer that specific question one way,
15 Commissioner Rogers. We as a company have an enormous
16 investment in the plant and I feel like I'm a personal
17 part of that investment. One of my objectives is to
18 turn a plant or plants over to my successor that are
19 in as good or better shape than those that I
20 inherited. We would like to have a plant that is in
21 condition that you and I can both agree on when it
22 comes time to renew its license, that it is renewable
23 and that it will continue to serve the public that we
24 serve well.

25 CHAIRMAN CARR: Let me focus that question

1 a little bit. How are you going to institutionalize
2 the maintenance and the maintenance program? That's
3 my concern about maintenance. It always has been.
4 There's nothing that says when I go and quit harping
5 on it, it won't go -- I realize everybody's going to
6 try to do it right, but there's nothing
7 institutionalized that says this is what you've got to
8 do and therefore if you don't do it, I'll rap you.

9 What's --

10 MR. LEE: I think that's what Jack was
11 referring to in the whole INPO program which is the
12 initial part of it. The special and assist visits, I
13 think as Commissioner Remick asked the question, those
14 were focused on those that appeared to the industry to
15 be problems. I think they will continue in the
16 future.

17 CHAIRMAN CARR: Well, they've all
18 committed to the maintenance standard, is that
19 correct?

20 MR. LEE: Right.

21 CHAIRMAN CARR: How did they commit?

22 MR. LEE: By becoming members and
23 maintaining their membership in INPO.

24 CHAIRMAN CARR: But what does that
25 commitment mean?

1 MR. CLARK: I think what it means is that
2 INPO in its assessments is going to be looking at how
3 we're doing. If they don't think we're doing okay,
4 they're going to be applying the pressure INPO can
5 apply, which is --

6 CHAIRMAN CARR: And that's sufficient to
7 institutionalize it as far as I should be concerned?
8 Is that your question? Okay.

9 COMMISSIONER ROGERS: It's a question like
10 that, yes.

11 MR. CLARK: I think in terms of how do you
12 know it's slipping and how do you know it's slipping
13 before it's so bad that you're really in trouble, the
14 most likely thing that I see is if we can start really
15 looking at equipment reliability data. Whatever
16 you're doing, whatever the program, if you're
17 equipment reliability is changing in other than an
18 individual component thing that you jump on, it seems
19 to me that that maybe would be the best indicator.

20 CHAIRMAN CARR: Well, it would help if we
21 had similar kinds of equipments, but --

22 COMMISSIONER ROGERS: Yes. Well,
23 that's --

24 CHAIRMAN CARR: Next generation.

25 MR. CLARK: At a given plant, you can see

1 is it changing or are there certain types of equipment
2 in the industry where reliability is going down. So,
3 I'm not sure everybody would agree with me or that
4 that's even right, but I think that may be the best
5 possibility that I've seen.

6 COMMISSIONER ROGERS: Well, if out of this
7 EPRI program or some other way you come up with some
8 things that give some reasonable assurance that
9 they'll start to detect a fall off in maintenance
10 quality, and maintenance with a big M, the broad
11 approach that involves all the people in the place,
12 the engineering staff and everyone else, I think that
13 gives you more credibility in your statement that
14 you're watching these things yourselves if you have
15 some way to detect something other than the gross
16 performance which I feel is not satisfactory because I
17 think it may take too long for those to begin to show
18 up.

19 MR. CLARK: I'm not sure that we're any
20 worse off in maintenance than we are in operations or
21 pick any other area. How do you know if things are
22 beginning to slip? I worry about that a lot and I'm
23 sure all these other guys worry about it a lot. INPO
24 worries about it. We thought to ourselves, how can
25 you foresee a plant is going down so it won't end up

1 in a lower category. There's a lot of thought to it
2 and so far no --

3 MR. McGRATH: There's a risk to try to
4 come up with the ten numbers that say, "If you do
5 these ten things right, everything is going to be
6 wonderful," because our people are very good at making
7 those ten numbers work. I, for one, am not
8 comfortable with any ten numbers that could say,
9 "Okay, this is the answer." We're dealing, as
10 Commissioner Curtiss says, with very complex,
11 interrelated management process and it almost defies
12 compartmentalization or coming up with the ten
13 indicators or whatever.

14 COMMISSIONER ROGERS: We know it's
15 complex. If it wasn't a complex problem, it probably
16 would have been solved a long time ago, in a sense.
17 But it's got many facets to it. No question about it.

18 CHAIRMAN CARR: In spite of what you say,
19 I don't believe people are out there manipulating the
20 numbers. I hope they're not.

21 MR. McGRATH: No, they're not. They're
22 not manipulating the numbers, but they can make -- if
23 you come up with five numbers and say, "Okay, this is
24 what your future depends on, this is what your raise
25 depends on," they'll make those five numbers work.

1 I'm not comfortable if they do that.

2 COMMISSIONER ROGERS: In doing that, let's
3 look at that for a moment. If they are driven to do
4 that, maybe their motivation isn't the right one, it's
5 to make the number right rather than to make the
6 system right. But could they do that and not do a
7 good job otherwise?

8 MR. McGRATH: I'm afraid that's possible.

9 COMMISSIONER ROGERS: Well, yes, I know
10 it's a worry. But I think you have to look at it
11 pretty carefully because that's the argument, that's
12 the fundamental argument here, that attention will be
13 diverted from doing the job. But look at that
14 question very carefully because in getting those
15 indicators right, how are they going to do it and can
16 they avoid doing their job properly while they're
17 getting the indicators right? Do they have to go out
18 of their way to not do their job to get the indicators
19 right?

20 MR. CLARK: I would suggest the answer is
21 yes, they can for a short time.

22 MR. McGRATH: Short-term.

23 MR. CLARK: I'll give you two examples.
24 I've been focused at one of the plants of reducing the
25 person rem. A serious recommendation by part of the

1 staff was to delete from the next outage some high
2 person rem jobs.

3 COMMISSIONER ROGERS: Yes. Sure. But,
4 you see, that --

5 MR. CLARK: So, you could --

6 MR. BRONS: Another example is the
7 operator not making rounds.

8 COMMISSIONER ROGERS: -- if you picked
9 those indicators the right way so that they cross,
10 they interleave within your system, that you can't do
11 it. I mean, you can't just not do the job. Because,
12 if you get all the indicators up, you --

13 MR. CLARK: I could do it. Another
14 indicator would catch me three years later. That's
15 what I was saying to you. I believe you could --

16 MR. BRONS: There's always delay.

17 MR. CLARK: -- manipulate them or, you
18 know, you could manage them. "Manipulate" suggests
19 evil motive. You could manage them in a way that
20 would not show up for a while.

21 COMMISSIONER ROGERS: Well, all right, but
22 then you haven't got the right combination of
23 indicators or something. What I'm saying is that I'm
24 with the Chairman in the sense that he doesn't think
25 that people are manipulating those out there. I don't

1 think they're manipulating them consciously.

2 The question is -- and even if one
3 individual tried to, how far could they get when all
4 is said and done in driving a set of indicators to all
5 look good and still have a lousy maintenance program?
6 You know, I think you really have to analyze that
7 question. We can't debate it today, but I think it's
8 not so simple to just simply say, well, you drive all
9 those indicators and you can still have a poor
10 program. I think you'd be bending the whole system
11 out of shape to do that. I think it would show up
12 very clearly if anybody was doing that, that it
13 wouldn't be something you could keep hidden, that you
14 get all the indicators right and yet the system is at
15 its center not very good at all. I don't think you
16 could do it.

17 So, you know, that's just my opinion, but
18 I think it's not a simple matter.

19 MR. CLARK: I agree. You couldn't do it
20 for long.

21 COMMISSIONER ROGERS: Okay. I think it
22 would be very obvious if that was happening, very
23 obvious.

24 Yes?

25 MR. COLEMAN: Perhaps a comment on

1 Chairman Carr's concern about the institutionalization
2 of the program. I think that perhaps what we could do
3 is to go back and look at the area of maintenance or
4 whatever we're going to call it and look at the
5 institutional parameters or elements that control that
6 currently or look at those that control operations or
7 training, and I think we'd find many of the same
8 controls.

9 From the NRC's perspective, you have
10 resident inspectors at each one of our units. They're
11 there almost all the time. You have regional-based
12 and Headquarters-based inspections. We have INPO
13 guidance. We have ANI teams. We talked about 25
14 percent of our supervisors' and managers' times are
15 spent addressing outside inspections. Half or so is
16 the NRC and half everyone else. We've got a lot of
17 indicators and a lot of feed-back and we've got the
18 ability on the institutional side to hold a utility
19 inspectable, enforceable to their maintenance program
20 procedures and documents that are looked at.

21 CHAIRMAN CARR: You can't inspect-in a
22 good program.

23 MR. COLEMAN: I agree. The key to that
24 seems to be management. We're really talking back to
25 the overall process of how people manage their

1 companies and manage the performance of their units.
2 So, perhaps that's something we could be looking back
3 to.

4 COMMISSIONER ROGERS: Well, could we just
5 move on? Because, I know the Chairman is going to
6 have questions of his own.

7 Mr. Clark, in your presentations on the
8 procurement activities and matters related to that and
9 the examples that you cited and the costs that were
10 incurred in dealing with those issues, the pipes and
11 flanges and the breakers, and your conclusion that
12 there's no crisis found, crisis in fraud or safety
13 items now after looking at all this, at the time the
14 issues came up, do you think that the industry could
15 have come up with an alternative approach that would
16 have given the same kind of assurance that there is
17 not a problem, let's say, the way you found in the
18 pipes and flanges situation?

19 True, you spent \$30 million tracking this
20 down and when all is said and done you found no safety
21 issues in installed materials, but is there any other
22 way that one could have approached dealing with that
23 issue than the way that it was approached?

24 MR. CLARK: I think I would divide it in
25 two parts. Initially, each utility rushed off I think

1 in part because of the time frame set by the bulletin.
2 Each utility instantly rushed off to address the
3 problem themselves to try to meet that time frame and
4 I think that was very inefficient. And a lot of the
5 cost when I gave you a number of so many man-years per
6 month going in initially, that's where a lot of the
7 cost went. I think we could have avoided that if it
8 had been treated as a less time-urgent issue, in other
9 words if the time frame had allowed a more reasoned
10 start.

11 Once we kind of got ourselves together and
12 NUMARC got in it and we started sharing the data and
13 saying, "Look, out of this whole population, how do we
14 go about it," I don't know that it could have been
15 done after that much more efficiently. I guess I'm
16 not quite close to it. Joe or Byron might want to--
17 but certainly in that first phase it was kind of a--
18 I don't want to use a word that's too extreme, but it
19 was a rushed effort individually and I think we've
20 suffered from that.

21 MR. BRONS: I think, Commissioner --

22 COMMISSIONER ROGERS: It's a question of
23 whether we can learn something here from this
24 experience.

25 MR. BRONS: I think one thing was

1 discounted in creating the sense of urgency and that
2 is that, at least relative to the application of these
3 components in any safety-related way, I think it's
4 been many years now where the industry uniformly
5 employs a considerable amount of inspection, post-
6 maintenance testing; when you're talking about
7 flanges, hydro-testing after they're installed;
8 testing of circuit breakers after they're installed
9 and safety-related.

10 So, I think, from my own perspective as an
11 industry manager, I was relatively comfortable that
12 the equipment that I had installed in the plant was
13 not posing a safety issue because it had been tested
14 after it was installed.

15 I will grant you that, for instance, in
16 the case of the circuit breakers, it was not tested to
17 failure to determine whether or not the breaker would
18 interrupt under enormously high loads, but then I'm
19 also relying on the overall design of the electrical
20 system which puts another weak link downstream that
21 may take out more equipment or what-have-you. I think
22 with that in mind, with that knowledge that this
23 equipment is installed and tested prior to being put
24 in service in safety related things, it gives us the
25 time to not treat these things as a crisis and to

1 approach it in a more reasoned way.

2 COMMISSIONER ROGERS: But sometimes these
3 crises are driven by external events coming from
4 certain other parts of the geography around here.

5 All right. That's all I have.

6 CHAIRMAN CARR: While we're on that
7 subject then, let me -- the nuclear procurement
8 program improvements leave implementation of a number
9 of practices as discretionary. Why did you do that
10 and how are we going to ensure that the best efforts
11 are done by the utilities?

12 MR. CLARK: I think we did that because we
13 think it could have an acceptable total program
14 without necessarily having completely each and every
15 one of those elements. One element is a little
16 stronger, you put a little more reliance over there or
17 attention over there and you could still have an
18 acceptable program. So, conceptually, I'd say that's
19 some of the thinking behind that.

20 In terms of the implementation, each
21 utility, I expect, is going to be asked to, say, tell
22 us what you've done, kind of a NUMARC follow-up
23 process that I tried to describe earlier. That
24 basically is the mechanism and then INPO, in its
25 inspections, in a general way, will be looking at the

1 results achieved. I don't want to suggest that INPO
2 is going to audit against that because that's not the
3 intention.

4 CHAIRMAN CARR: Did all the licensees meet
5 the industry-established milestone on January 1st,
6 1990?

7 MR. LEE: On the commercial grade --

8 CHAIRMAN CARR: On the utilization and
9 commercial grade items.

10 MR. LEE: Yes.

11 CHAIRMAN CARR: They all did?

12 MR. LEE: Yes.

13 CHAIRMAN CARR: Okay. Then there's no
14 reason to expect they won't meet the other two then?

15 MR. CLARK: By and large, our NUMARC
16 initiatives has been very good results. I think maybe
17 there were a few where a few people slipped beyond the
18 date. Overall, we got very good response.

19 CHAIRMAN CARR: My feeling of this whole
20 thing was we didn't need another rule because we
21 already had Appendix B to Part 50. That was enough to
22 tell you you had to do it right and whatever that
23 required. How do you see this relating to the
24 existing requirements in Appendix B?

25 MR. CLARK: I think we believe, and I

1 tried to say that we think the regulations you need
2 exist and are adequate and there's not a need to
3 augment change, add to the regulations. What's needed
4 is us to go implement the kinds of things we've
5 decided to do.

6 CHAIRMAN CARR: Okay. I'm still going to
7 make a couple of other comments and quit. I'm still a
8 little uneasy about the institutionalizing the
9 maintenance and the maintenance programs. I'm not
10 under any illusions that the emphasis on maintenance
11 is solely utility-generated. There's no doubt in my
12 mind that the heavy emphasis the NRC has put on
13 maintenance has had a beneficial impact on your
14 programs.

15 I, on the other hand, don't -- I guess I
16 feel like that the poor programs and the lack of
17 maintenance in the past is behind us. That's a
18 personal feeling of mine. I think that we're past the
19 point where you've heard these O&M numbers are going
20 up tremendously. A lot of that is in the M area and I
21 think we're at the point where it's pay me now or pay
22 me later and I think for a long time we weren't doing
23 enough maintenance of the right kinds or carefully
24 enough. I think you ended up having to upgrade those
25 programs and do a better job.

1 My question really is are we where we want
2 to be yet and how can we stay there? Does anybody
3 remember the forced outage goal for '90?

4 MR. McGRATH: Four and a half or four or
5 five percent, isn't it?

6 MR. BRONS: I think it's around five or
7 4.1 and that's a median.

8 CHAIRMAN CARR: 4.1? What's the
9 difference between the equivalent availability and the
10 forced outage summary? Is that refueling?

11 MR. McGRATH: Planned outages.

12 MR. CLARK: Planned outages, of which
13 refueling is a big part, but not all.

14 MR. COLEMAN: The equivalent availability
15 factor also contains regulatory imposed derates, for
16 example, due to environmental conditions. So, things
17 that are beyond the control of the utility or plant
18 basically acts --

19 CHAIRMAN CARR: Well, you've got the river
20 too warm. I understand that.

21 MR. CLARK: That's in there.

22 MR. McGRATH: Condenser repairs or you can
23 shut down part of a unit.

24 CHAIRMAN CARR: Okay. The --

25 MR. LEE: And it also compensates for

1 deratings in a sense or it tries to take deratings
2 because equipment is out of service.

3 CHAIRMAN CARR: But the availability
4 factor takes in the fact that you're load sharing, for
5 instance, of Commonwealth Edison a lot whereas
6 capacity factor wouldn't.

7 MR. LEE: And the old number, which was
8 just a straight availability, whether the unit was
9 running or not, masked a lot of these other partial
10 deratings and those types --

11 CHAIRMAN CARR: I don't know how much
12 comfort I can take in your steady improvement on
13 performance indicators because the last piece of paper
14 I think I read from AEOD said they had seen a leveling
15 off --

16 MR. LEE: That was earlier this year.

17 CHAIRMAN CARR: -- at performance
18 improvement this year. So, I'll watch that a little.
19 I don't mean -- that's not bad. You've got to level
20 off somewhere. And I would like to make sure you
21 realize, that we all realize that generic
22 communications don't impose the requirements, which
23 was mentioned here that it did, but it doesn't. In
24 case you guys are still under the impression it does,
25 it doesn't.

1 MR. McGRATH: Who's we all? Everyone at
2 this table?

3 CHAIRMAN CARR: Everyone in the room, I
4 hope.

5 Any other comments from my fellow
6 Commissioners?

7 Well, let me thank you for your
8 presentation. We'll carefully consider the comments
9 that you've given us here today and I made a list of
10 things I can do to solve all our problems.

11 When discussing the state of the nuclear
12 industry, it's important to acknowledge that we've
13 seen sustained or improving trends in virtually every
14 indicator of safety performance that the NRC routinely
15 monitors.

16 We must recognize, however, that these are
17 gross measures of safety performance and that they
18 remain areas for continued improvement for most plants
19 in areas such as maintenance, procurement and
20 operations. Even with an improving safety record,
21 continued industry attention is needed to careful
22 maintenance, proper training and good plant
23 management.

24 We will continue to monitor the results of
25 your efforts in the maintenance and procurement as

1 well as other important areas.

2 Any other comments?

3 If not, we stand adjourned. Thank you
4 very much.

5 (Whereupon, at 12:17 p.m., the above-
6 entitled matter was concluded.)

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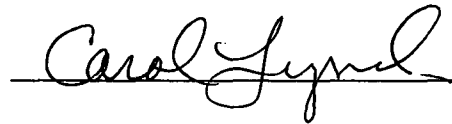
This is to certify that the attached events of a meeting
of the United States Nuclear Regulatory Commission entitled:

TITLE OF MEETING: BRIEFING ON NUMARC'S PERSPECTIVE OF THE
STATE OF THE NUCLEAR INDUSTRY

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: OCTOBER 26, 1990

were transcribed by me. I further certify that said transcription
is accurate and complete, to the best of my ability, and that the
transcript is a true and accurate record of the foregoing events.



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**PRESENTATION TO THE NRC COMMISSIONERS
BY THE NUCLEAR MANAGEMENT AND RESOURCES COUNCIL
OCTOBER 26, 1990**

- O INTRODUCTION AND CLOSING REMARKS
MR. EUGENE R. McGRATH
CHAIRMAN AND CEO
CONSOLIDATED EDISON COMPANY OF NEW YORK**
- O UPDATE ON INDUSTRY ACTION PLAN
FOR CONTINUED IMPROVEMENT IN MAINTENANCE
MR. JOHN C. BRONS
EXECUTIVE VICE PRESIDENT - NUCLEAR GENERATION
NEW YORK POWER AUTHORITY**
- O RECENT PROCUREMENT INITIATIVES
MR. PHILIP R. CLARK
PRESIDENT AND CHIEF EXECUTIVE OFFICER
GPU NUCLEAR CORPORATION**

MAJOR ISSUES AFFECTING THE NUCLEAR INDUSTRY

Access Authorization
Advanced Light Water Reactor Program
Backfitting
Bolting Integrity
Cascading Technical Specifications
Check Valve Reliability
Control Room Habitability
Decommissioning
Design Basis Reconstitution
Diesel Reliability
Electrical Power Reliability
Emergency Planning (Emergency Action Levels)
Emergency Response Data System
EPA Protective Action Guidelines
EPA Radionuclides Emission Standards
Epidemiological Studies
External Events
FEMA Guidance Memoranda
FEMA User Fees
Fitness for Duty
Hot Particle
Human Factors
Impact of Lower Worker Dose Limit
Inservice Inspections/Inservice Testing
In-situ Testing of Valves
Interfacing System LOCA
Interlocks and LCOs for Class 1E Tie Breakers
License Amendment Review Process
License Renewal
Maintenance
Mixed Waste
MOV Performance (NRC Generic Letter)

NRC Rules of Practice (Part 2)
Nuclear Plant Aging
Nuclear Plant Equipment Procurement
Operating and Maintenance Costs
Operator Professionalism
Operator Requalification
Operator Training and Qualification
Radiation Protection/10 CFR 20 Rulemaking
Reactor Coolant Pump Seal Failures
Regulatory Environment and Impact
Rosemount Transmitters (Bulletin 90-01)
Safety Goals/Cost Benefit
Security
Seismic Issues
Severe Accident Policy Implementation
Severe Accident Management Program
Shutdown Plant Issues
Software Quality Assurance
Source Term
Standardization and Licensing Reform
Station Blackout
Substandard Electrical Components
Technical Specification Improvement
Temporary Non-code Repairs (GL 90-05)
10 CFR 50.59 (Safety Evaluation)

1. INPO PLANT EVALUATION AND ASSISTANCE ACTIVITIES
IN AREAS RELATED TO MAINTENANCE.
2. MONITORING THE PERFORMANCE AND MAINTAINING THE RELIABILITY
OF EQUIPMENT
3. TRAINING ACTIVITIES
4. MONITORING ACTIVITIES
 - A. Management capability to monitor the effectiveness
of maintenance activities
 - B. Industry-wide monitoring of plant performance
and establishment of long-range goals
 - C. NRC indicator pilot project using NPRDS
5. COMMUNICATIONS AND REGULATORY INTERFACES.
6. TOOLS AND TECHNIQUES
 - A. Reliability centered maintenance (RCM) demonstration
and use
 - B. Motor operated valve (MOV) related activities
 - C. Check valve related activities
 - D. Service water assistance program (SWAP) activities
7. OWNERS GROUPS ACTIVITIES

INDUSTRY ACTION PLAN
SUMMARY OF ACTION ITEM STATUS

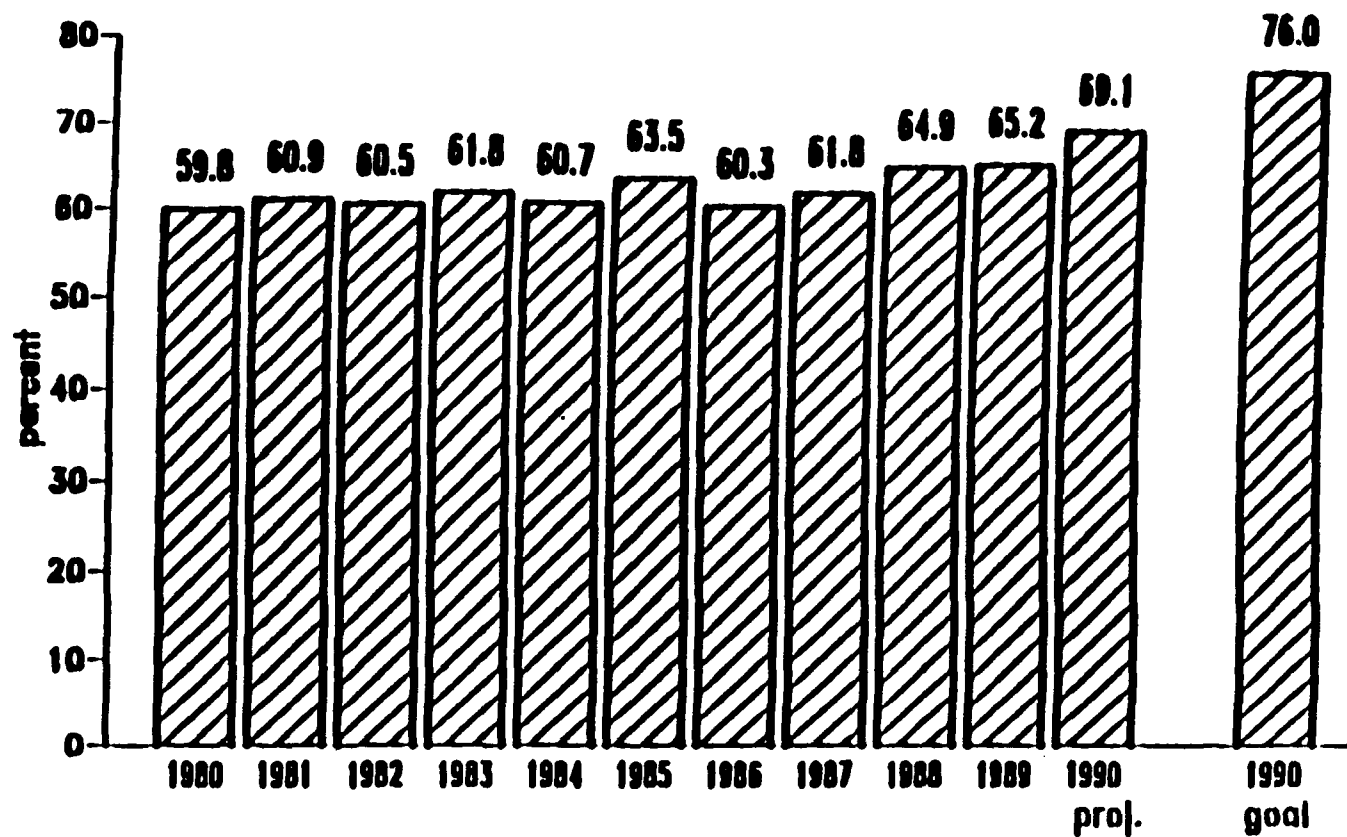
TOTAL ACTIONS PLANNED	189
TOTAL ACTIONS COMPLETE-TO-DATE	109

22 OPEN ITEMS RESCHEDULED

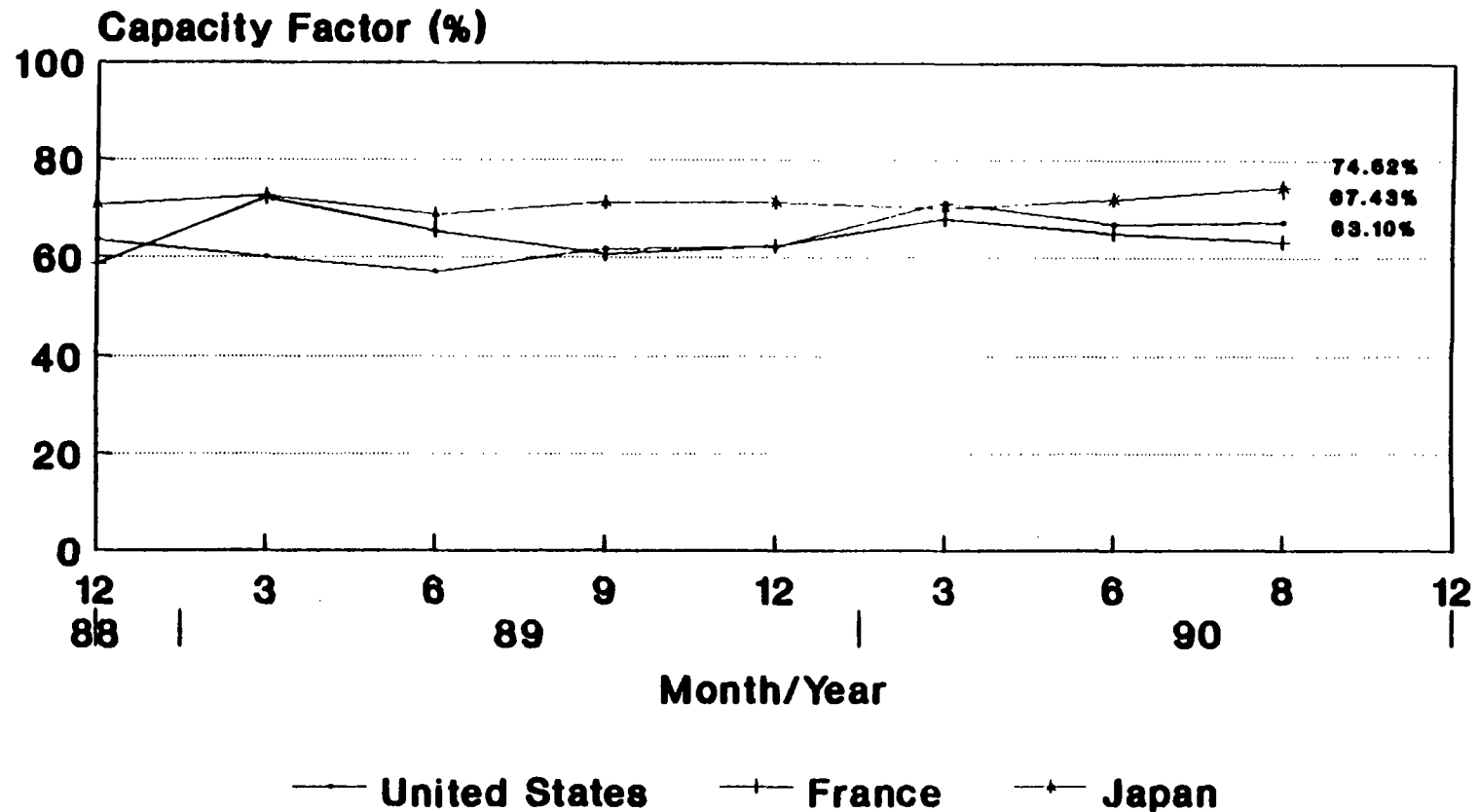
INDUSTRY - 15

NRC - 7

Equivalent Availability Factor Industry Average

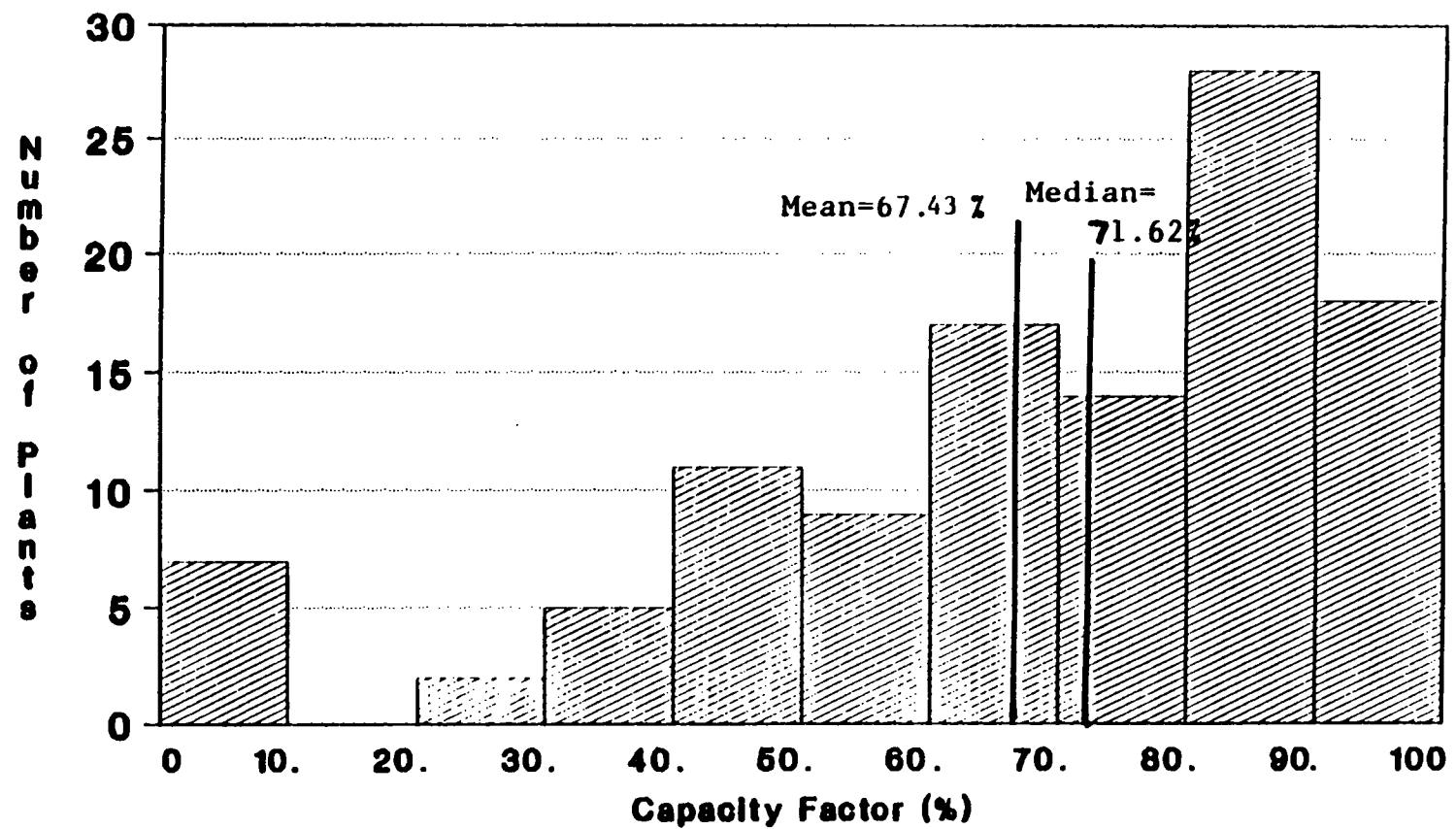


Capacity Factors Year-to-Date U.S./France/Japan



3rd Quarter 1990 data unavailable
8/90 is most current data

Distribution of Capacity Factors United States August 1990



Total Number of Plants = 111

**RESULTS OF
NUCLEAR GENERATING STATION
MAINTENANCE TEAM INSPECTIONS
AUGUST 1990**

	PROGRAM	IMPLEMENTATION
GOOD	28	19
SATISFACTORY	24	32
POOR	1	2
<hr/>		
COMPLETE	53	53
REMAINING STATIONS	21	21

**INDUSTRY ACTIVITIES IN RESPONSE TO NRC BULLETIN 88-05
PIPE FITTINGS AND FLANGES**

- 0 RECORDS REVIEWS TO IDENTIFY OVER 20,000 INSTALLED ITEMS**
- 0 IN PLANT TESTING OF APPROXIMATELY 7000 ITEMS**
- 0 COMPLETE LABORATORY TESTING OF OVER 600 ITEMS**
- 0 HUNDREDS OF PLANT SPECIFIC JCOs**
- 0 GENERIC PROGRAM TO ANALYZE ABOVE RESULTS**
- 0 OVERALL RESOURCE IMPACT: OVER \$30 MILLION**
- 0 RESULT: ALL INSTALLED ITEMS SUITABLE FOR SERVICE**

**INDUSTRY ACTIVITIES IN RESPONSE TO
MOLDED CASE CIRCUIT BREAKER ISSUE**

- 0 OVER 24,000 BREAKERS PROCURED AS SAFETY RELATED REVIEWED IN
RESPONSE TO NRC BULLETIN 88-10**
- 0 RESULT: LESS THAN ONE PERCENT TRACEABLE TO SUSPECT
SUPPLIERS**
- 0 OVER 36,000 BREAKERS PROCURED AS NON SAFETY RELATED REVIEWED
UNDER INDUSTRY INITIATIVE**
- 0 RESULT: APPROXIMATELY THREE PERCENT IDENTIFIED AS SUSPECT**
- 0 ABOVE PERCENTAGES REFLECT SUSPECT BREAKERS, NOT DEFECTIVE
BREAKERS**

ELEMENTS OF INDUSTRY PROCUREMENT INITIATIVES

- 0 DEDICATION OF COMMERCIAL GRADE PARTS FOR SAFETY RELATED APPLICATIONS**
- 0 PERFORMANCE BASED VENDOR AUDITS**
- 0 ENHANCED RECEIPT TESTING AND INSPECTION**
- 0 GUIDELINES FOR FRAUD DETECTION**
- 0 INFORMATION SHARING**
- 0 OBSOLESCENCE**
- 0 GENERAL PROCUREMENT**

"A BASIC CONCERN OF LICENSEES IS THE NUMBER AND SCOPE OF REQUIREMENTS IMPOSED BY THE NRC."

"A PERSISTENT COMMENT WAS THAT NRC REQUIREMENTS, AND PENDING REQUIREMENTS, ARE POORLY INTEGRATED AS TO THEIR OVERALL EFFECT ON PLANT OPERATION AND UTILITY RESOURCES."

"LICENSEES MAKE A STRONG PLEA FOR NRC TO ESTABLISH A PRIORITY SYSTEM."

"LICENSEES COMMENTED....THAT NRC FAILS TO APPRECIATE THAT LICENSEE PREPARATION FOR AND SUPPORT OF NRC INSPECTION ACTIVITIES INVOLVE SEVERAL MAN-YEARS OF LICENSEE EFFORT EACH YEAR."