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December 26, 1995

ComEd

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Progress Update for Commonwealth Edison's Nuclear Power Stations
NRC Docket Nos. 50-237/249, 254/265, 373-374, 295/304, 454/455, 456/457

Reference: Meeting between representatives of ComEd (M. J. Wallace, et. al.) and the NRC staff (H. J. Miller, et. al.), dated December 8, 1995.

In the referenced meeting, ComEd presented information to the NRC staff regarding several important issues at each of our Nuclear Power Stations. Because of the comprehensiveness of our annual station plans, the areas encompassed in our presentation provided only a partial overview of station achievements in the recent past and station efforts for the near future. A more complete picture of overall plant performance and future goals and expectations can be extracted from station plans that describe future actions to address past performance and upcoming needs.

At the time of the meeting, some Business Plans and/or Action Plans were still under development at the sites which provide additional details of station efforts and resources to address certain other key station issues. Because the station Business Plans are now complete, the purpose of this letter is to provide to the NRC staff an updated version of the information presented on December 8th at Region III. A copy is provided as an attachment to this letter. Key Senior Managers and site staff develop these plans based upon the needs and priorities for the upcoming year. These plans are dynamic management tools, adaptable to changing plant conditions and emerging issues.

Within the overall action plans for continuous improvement at each station there are areas of focus that are deemed most significant to safe, reliable operation. The information attached to this letter is limited to accomplishments and performance gains in the past year and to our expected achievements and expected performance measures in the next six months in these focus areas. The overall action plans are much broader in scope but no effort is made in the attachment to describe our accomplishments or expected results in anything beyond the focus areas. Instead we intend only to highlight ComEd's progress regarding human and equipment performance.

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If there are any further questions regarding this presentation, please contact this office.

Sincerely,

John C. Brons
Vice President

Attachments: Progress Update for ComEd's Nuclear Power Stations

cc: J.M. Taylor, Executive Director of Operations - NRR
H. J. Miller, Regional Administrator - RIII
W.T. Russell, Director - NRR
A. B. Beach, Deputy Regional Administrator - RIII
B. Clayton, Branch Chief - RIII
R. A. Capra, Project Director - NRR
Office of Nuclear Facility Safety - IDNS

ATTACHMENT

Progress Update for ComEd's Nulcear Power Stations

Dresden

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Experienced managers added to the Dresden. Management team, including:
  - Station Manager
  - Engineering Manager
  - Operations Manager
  - Work Control and Outage Manager
  - Plant Engineering Superintendent
  - Radiation Protection Manager
  - Maintenance Manager
- Most are from outside ComEd and were recruited based on their strong performance at other facilities. We now have a stronger management team.

EQUIPMENT PERFORMANCE

- During the Fall of 1994 and Spring of 1995, an extensive series of reviews and walkdowns was conducted to identify items that could impact safety or operations. Major items from these walkdowns/ reviews were prioritized and scheduled for review. The most important items, described in our 4/24/95 letter to the NRC, have been completed. Key among these were:
  - Unit 3 Feedwater level control logic improvement
  - Unit 2 Core Shroud repair
  - Unit 2 reactor bottom vessel drain restored
  - Operated "A: train of Unit 3 Steam Jet Air Ejector/Recombiner
- System Review Team established to identify latent/potential system problems and reviews of five pilot systems were completed.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Site-wide personnel performance standards developed and issued to personnel in booklet form.
- Specific Operations standards developed and issued.
- Maintenance Standards developed and issued with bargaining unit involvement.
- Conservative Decision Making seminars conducted in Operations, Maintenance and Engineering.
- Training of Maintenance First Line Supervisors on supervisory skills, standards and expectations completed.
- Formal plans and checklist for error-free startups and shutdowns of the units have been developed and successfully implemented on Unit 3.
- Three error-free startups of Unit 3 were accomplished, involving over 2000 rod manipulations.

EQUIPMENT PERFORMANCE

- Over 200,000 pounds of shielding and several surveillance cameras were installed to reduce personnel radiation exposure.
- Vacuuming and structural inspection of Unit 1 fuel pool and transfer canal was completed. The Unit 1 transfer tube has been permanently sealed, eliminating a potential fuel pool leakage pathway.
- Performance Centered Maintenance review of preventive maintenance was completed to evaluate and upgrade preventive maintenance on five key systems.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Detailed performance measures were established to measure effectiveness of actions included in our Focus Area improvement plans. These measures are reviewed during weekly progress meetings and monthly performance meetings.
- Improved trend analysis methods and reports were established to permit more effective analysis of causes of problems.
- Routine reviews of corrective action effectiveness have been established.
- The Management by Walking Around and Monitor Watch programs have been established to provide a formal method for line management self-assessment.

HUMAN PERFORMANCE (continued)

- The Operational Safety Predictor (OSPRE) software program for scheduling work has been implemented to minimize operational risk of work activities based on the Dresden PRA.
- A "Work It Now" (WIN) Team has been established and has been used to tackle emergent work.
- The Electronic Work Control System has been implemented.
- An upgraded industrial safety program and procedures were developed and implemented.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Operations errors have been on a downward trend for four consecutive quarters.
- Over 40 industry experienced Design and System Engineers have been hired.
- Completed review of 250 administrative procedures resulting in a deletion of 66 procedures and revision to 100 others.
- The number of procedures in revision was reduced from over 900 in June 1995 to 486 as of October 31, 1995.
- Improved Industrial Safety Accident Rate from 2.4 in 1994 to 0.89 as of November 1995.
- Reduced the number of overdue corrective actions and investigations from over 40 each in the spring of 1995 to zero in November 1995.
- Reduced the number of PCEs from 300 in 1994 to 100 in November 1995 year to date.
- Since July 1, 1995 Dresden has experienced 2 LERs caused by personnel error as compared to 6 in the first half of 1995.
- As of October 31, 1995, daily non-outage exposure for 1995 has been 0.384 person-rem per day, compared with .790 per day in 1994 (a 48% reduction).

EQUIPMENT PERFORMANCE

- WIN Team has completed over 1800 minor corrective maintenance items.
- Control Room Work Request backlog reduced from over 120 to 36 during 1995.
- Operator Work-arounds reduced from over 80 to 47 during 1995.
- Non-outage corrective backlog reduced from over 1600 to 1118 during 1995.
- With the exception of Unit 3 HPC/ISO unavailability on key safety systems is better than the INPO industry average since the beginning of July 1995.
- As of October 1995, there has been a 49% reduction in radioactive waste generated per month compared to 1994 levels.
- Forty-four of the 86 "hot spots" in plant piping and equipment have been eliminated.
- Contaminated area has been reduced from 15.5% to 10.34% during 1995.
- Reduction in the number of temporary alterations from 56 to 35 during 1995.

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Achieve error-free restart of Unit 2.
- Implement revised Out-of-Service program and procedure to meet industry standards.
- Complete evaluation of assignments and capabilities (360 degree assessments) of management supervisory personnel.
- Complete remediation and reevaluation of site management personnel identified as low performers during Fall 1995 evaluations.
- Complete upgrade of System Trending Program to provide a consistent basis for system manager monitoring of system performance.
- Complete Engineering Qualification Card Upgrade and Certification Guide Program to ensure that Engineering personnel are appropriately qualified for assigned tasks.

EQUIPMENT PERFORMANCE

- Replan and complete D2R14 refueling outage.
- Install new feedwater regulating valves and control system on Unit 2.
- Complete Zinc addition modification on Unit 2.
- Install biometric hand geometry system to control plant access.
- Make Unit 2 Station Blackout (SBO) Diesel available.
- Complete Generic Letter 89-10 work on Unit 2 valves.
- Complete Unit 2 Reactor Water Cleanup system heat exchanger and major piping replacement.
- Complete addition of shielded reflective insulation to recirculation piping in Unit 2 to reduce drywell doses in future outages.

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96
(continued)

HUMAN PERFORMANCE

- Provide MARC training for designated supervisors.
- Complete Phase I training and testing of site workforce to ensure that workforce members have the correct knowledge and skills for job assignments (Engineering and Maintenance to complete by 5/96).
- Complete three-day training on the upgraded work control process and fully implement the new process.
- Complete development and implementation of periodic self-assessment programs in Operations, Maintenance, and Radiation Protection. (Operations program is now in place.)

EQUIPMENT PERFORMANCE

- Complete reviews of an additional 14 systems to identify latent/potential problems.
- Complete Performance Centered Maintenance reviews of additional 14 systems.
- Clean up 3 of 10 designated worst plant areas.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- Continued improving trend in Operations human performance (Level 3 events) from 8 per quarter by end of September, 1995 to 4 per quarter by end of March, 1996.
- End cyclical performance in out-of-service related events and achieve $\leq$ 1 Level 3 event per month by March, 1996.
- Attain zero personnel error LERs during January - April 1996.
- Achieve goal of 40 days between plant events.
- Reduce ISAR to 0.8 during January-April 1996.
- Achieve fewer than 25 Personnel Contamination Events during January-April 1996.

EQUIPMENT PERFORMANCE

- Reduce corrective maintenance backlog to 950.
- Reduce operator workarounds to 30.
- Reduce Control Room deficiencies to 30.
- Reduce non-outage temporary alterations to 10.
- Maintain zero overdue surveillances beyond critical date.
- Attain zero overdue preventive maintenance items past critical date.
- Operate Units 2 and 3 with less than 3 unplanned LCO/DATR days per week.
- Attain key safety system availability levels at or above industry comparable plant averages for 1995.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96
(continued)

HUMAN PERFORMANCE

- Maintain zero overdue investigations and corrective actions.
- Achieve schedule starts within one hour 85% of the time.
- Achieve 95% pass rate on operator license requalification exams.

Quad Cities

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Implemented "Self Check" Program.
- Implemented "Conservative Decision Making" seminars for Operations, Engineering and Maintenance personnel. Thirteen seminars have been completed to date.
- Completed one - month "Maintenance Stand-down" to improve work control processes and implementation processes.
- Implemented Operational Safety Predictor (OSPRE) in Operations.
- Created and implemented a consolidated Site Quality Verification monthly report.
- Implemented Electronic Work Control System (EWCS).
- Implemented Senior site management overview of all unit startups.
- Elevated Operations Standards to enhance Control Room communications (i. e., 3-way repeat back and phonetic alphabet use), more frequent performance of pre-job briefings and increased expectations for shift turnovers, shift briefings and control board walkdowns.
- Initiated Performance Centered Maintenance review of preventive maintenance.

EQUIPMENT PERFORMANCE

- Refurbished Electro-Hydraulic Control System on Unit 2.
- Refurbished Feedwater Level Control System on Unit 2.
- Overhauled Control Rod Drive Hydraulic Control Units on Unit 2.
- Refurbished Reactor Recirculation Motor Generator Set Speed Controllers on Unit 2.
- Completed Reactor Core Shroud repairs to Unit 2.
- Replaced Reactor Water Clean Up piping on Unit 2.
- Overhauled Reactor Recirculation System Motor Generator Set fluid couplers on Unit 2.
- Installed High Pressure Coolant Injection System exhaust steam spargers on Unit 2 (reduced HPCI vibrations).
- Cleaned and re-preserved the torus on Unit 2.
- Accelerated Control Rod Drive overhauls and replacements on Unit 2.
- GL 89-10 actions completed for Unit 2.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS (continued)

HUMAN PERFORMANCE

- Several experienced managers were added to the Quad Cities Management Team:
  - Engineering Manager
  - Maintenance Superintendent
  - Long Range Planning Superintendent

  All are from outside ComEd and were recruited based on their strong performance at other facilities. These individuals have strengthened the management team.
- Site-wide personnel performance standards developed and issued to personnel in booklet form.
- Developed and issued a "Conduct of Operations" Manual.
- Initiated Systems Certification training for Engineering Personnel.
- Ten site personnel completed Nuclear Business Leadership training.
- Instituted a "Just in Time" training concept to provide immediate training on complicated or infrequently performed tasks.
- Increased the emphasis by the management team on industrial safety.
- Increased the emphasis on Foreign Material Exclusion controls by increasing the level of management attention and knowledge level of the worker.

EQUIPMENT PERFORMANCE

- Operation of Unit 2 Feedwater Level Control in 3-element control.
- Initiated System Readiness Reviews.
- Completed System Notebooks for Maintenance Rule Systems.
- Over 170,000 pounds of shielding for Q2R13 and several surveillance cameras were installed per approved procedures to reduce personnel radiation exposure.
- Instituted the 12-week rolling schedule philosophy to perform work.
- Developed action plans to address the requirements of the Maintenance Rule.
- Established "Fix It Now" (FIN) Team to respond quickly to some material condition concerns.
- Established the Maintenance Superintendent as the "owner" of overall management of material condition.
- Established the Operation Manager as the "owner" of the overall management of operator workarounds.

2. PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Reduced contaminated floor space from approximately 10% (1/1/95) to approximately 4% (current).
- Reduced 1995 accumulated radiation exposure goal from 1150 to 735 person-rem. (Compared to over 1128 person-rem in 1994.)
- Reduced Personnel Contamination Event (PCE) rate to below goal for 1995 year to date.
- Reduced LERs from 25 in 1994 to 15 in 1995 year to date with only 4 involving human performance.
- Reduced significant overdue commitments to zero in November 1995.

EQUIPMENT PERFORMANCE

- Unit 1 had 283 days continuous run setting a new ComEd record for a single BWR.
- Vibration-related problems associated with High Pressure Coolant Injection Systems on both units have been reduced such that vibration measurements for both units are now within "acceptable" levels.
- Reduced vibration problems with other rotating machinery, particularly Reactor Feed Pumps from 77 outstanding problems in 1993 to 19 outstanding problems in November, 1995.
- Can now operate Feedwater Level Control in 3-element mode.
- Removed 11 operator workarounds during Unit 2 refueling outage.
- Radwaste stream reductions and improved compaction techniques reduced Dry Active Waste costs by approximately 45%.

2. PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Operations standards elevated and operations performance monitoring in place; resulted in improved control room professionalism and demeanor.
- Operating expectations were defined and training conducted for communications, procedure adherence and self-check resulted in improved performance for these areas.
- Implemented design change process improvement.
- Line management overview of department training for the first 11 months of 1995 exceeded the established goal by a factor of three.
- Initiated Maintenance line management overviews of in-process work activities.

EQUIPMENT PERFORMANCE

- Radiological "hot spots" have been reduced by approximately 33%.
- Completed action on approximately 95% of all planned activities resulting from the 1993 DET inspection.
- Completed over 800 FIN team items since August, 1995.
- Reduced identified operator workarounds by 50%.
- Installed Biometrics to control plant access.
- Reviewed and revised System Engineering Notebooks now accurately reflect plant system status.
- Total open Nuclear Work Request Tasks have been reduced by approximately 800 in the last eight months.

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Issue 1996 Management Plan. (This is designed to close out the Quad Cities Course of Action.)
- Improve radworker practices by:
  - Training new employees with 2 day NGET.
  - Completing and distributing Radworker Handbooks to all employees.
- Complete Maintenance First Line Supervisor Training.
- Senior Managers will attend Root Cause Analysis training.
- Completion of Operations procedures required to implement the Technical Specifications Upgrade Project.
- Implement the revised Out-of-Service Program.
- Continue site emphasis on Industrial Safety.
- Seven additional site personnel to attend Nuclear Business Leadership training.

EQUIPMENT PERFORMANCE

- Overhaul Control Rod Drive Hydraulic Control Units on Unit 1.
- Refurbish Reactor Recirculation Motor Generator Set Speed controllers on Unit 1.
- Refurbish Unit 1 Feedwater Level Control.
- Refurbish Unit 1 Electro-Hydraulic Control System.
- Install Reactor Core Shroud repair on Unit 1.
- Complete Reactor Water Cleanup system heat exchanger and major piping replacement on Unit 1.
- Continue accelerated replacement/overhaul of Control Rod Drives on Unit 1.
- Install improved feedwater flow measuring device on Unit 1.
- Removal of 10 operator workarounds during Q1R14
- Reduce the number of control room deficiencies by 25%

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96 (continued)

HUMAN PERFORMANCE

- Complete development of a comprehensive Work Analyst training program.
- All existing Temporary Alterations in place for over 90 days will have action plans established for permanent resolution.
- Provide training to Site Quality Verification personnel on the Quality Verification Instructions.
- Assess current succession planning program.
- Dedicate a group of engineers to facilitate root cause evaluations.

EQUIPMENT PERFORMANCE

- Implement amended High Pressure Coolant Injection and Reactor Core Isolation Cooling (HPCI/RCIC) System Improvement Plans focused on increasing the reliability of these systems.
- Complete the electrical bus ties for the Station Blackout Diesel Generator on Unit 1.
- Complete permanent installation of the Scram Discharge Volume instrumentation on Unit 1.
- Complete 1B Pumpback (Joy) Air Compressor modification on Unit 1.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- The Course of Action will be 50% complete after completion of the 1995 Management Plan.
- Expect improved productivity in Maintenance as a result of "Maintenance Stand-down".
- Achieve zero overdue investigations and corrective actions for Level 2 and 3 PIFs.
- Complete 100% of classroom phase for assigned managers in the Senior Reactor Operator Certification.
- Seventeen total graduates from the Nuclear Business Leadership class.
- Achieve zero overdue "significant" (NRC, INPO and SQV) commitments.
- Reduce High Radiation Area events by 50% from 1995 levels.
- Reduce significant human performance events (Level 2 PIFs) to ≤ 2 year to date.
- Achieve less than 2.5 Personnel Contamination Events per 10,000 Radiological Work Permit Hours.
- Achieve improved root cause analysis results by Engineering.

EQUIPMENT PERFORMANCE

- Improved performance from major equipment that was refurbished or overhauled.
- No repeat equipment failures on equipment worked during Q2R13 or Q2F39.
- Reduce operator workarounds to ≤ 33.
- Zero Technical Specification surveillances beyond critical date.
- Achieve 90% capacity factor for Unit 2.
- Maintain contaminated square footage for outage/nonoutage at 20% / 5% respectively.
- Process 600 maintenance actions using "Fix It Now" process.
- Maintain the Hydrogen Injection System on line greater than 90% of the time each respective unit is operating.
- Maintain Fuel Reliability measurements at less than 300 microcuries/second as evidence of proper Foreign Material Exclusion (FME) control, new fuel receipt inspection and reactor water chemistry control.

LaSalle

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Experienced managers added to the LaSalle Management Team, including:
  - Engineering Manager
  - Systems Engineering Manager
  - Radiation Protection Manager
  - Site Quality Verification Director
  - Executive Assistant
- Leadership Development III Seminars (Vision/Values rollout) completed by all personnel on site.
- Conservative Decision Making training conducted for Operating, Engineering and Maintenance personnel.
- Systematic Approach to Training improvements implemented in all programs.
- Revised Integrated Reporting process including trending, and strengthened Event Screening meetings.
- Electronic Operator rounds deployed; paperwork reduced, tracking improved.
- Conversion process from Standard Tech Specs to Improved Tech Specs initiated; submittal to NRC 7/96.
- Operations procedure group staffed; schedule for completion of procedure review/rework established.

EQUIPMENT PERFORMANCE

- 2 U1, 1 U2 Condensate/CB pumps overhauled, 1 U1 Condensate/CB pump overhaul in progress.
- 1 U1, 1 U2 CW Pump/motors overhauled.
- 1 Reactor Recirculation (RR) discharge valve & 1 RR Flow Control Valve (U2) rebuilt.
- 1 U2 Main Steam Isolation Valve valve rebuilt.
- 75% U1, 50% U2 SSPV Diaphragms replaced.
- U2 Main Steam Isolation Valve limit switches replaced.
- Plant Operating Top 5 List established.
- U2 feedwater control modification/upgrade complete. Incorporated lessons learned from U1.
- System Engineering performed in-depth system walkdowns to identify material condition problems resulting in the identification of hundreds of work deficiencies that were factored into the work backlog.
- Closed out GL 89-10 MOV commitments and actions; 2.5 years ahead of schedule, "leader in industry" per NRC.
- Action plan developed to address radwaste material condition concerns.
- U2 outboard solenoids upgraded.
- Major modifications to the Makeup Demineralizer and Radwaste Evaporator systems.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Root Cause investigation process strengthened; 3 people added to Root Cause Group.
- Consolidated Facilities Maintenance (CFM) & First Hit Teams improve ability to get work done.
  - CFM completing ~125 WR/wk; FHT completing ~45 WR/wk, freeing up Maintenance for corrective work
- High quality Root Cause investigations on RR, CD/CB, NI systems completed.
- Operations standards elevated and operations performance monitoring in place; resulted in improved CR professionalism and demeanor.
- Tech Spec. Surveillance review completed; resulted in 60 GSRV changes.
- Began formal risk assessment of On-line maintenance work.
- Maintenance reduced inadequate procedures from over 100 to zero.

EQUIPMENT PERFORMANCE

- Several modification/maintenance activities taken to improve U2 RCIC.
- Condenser Boot replaced U2 Main Condenser.
- 56 temporary system changes removed or converted to permanent installations - 39 remain as of December, 1995.
- 103 design changes completed.
- 70 operator workarounds eliminated.
- Reduced non-outage corrective backlog from 600 to 325.
- Reduced non-outage control room work requests from 45 to 15.
- Reduced radwaste work request backlog from 315 to 135, surpassing the year end goal of 150.
- Performance Centered Maintenance review was completed to evaluate and upgrade preventive maintenance on; 100% BOP instruments (2500), 100% of the pumps, 30% of the MOVs, 50% of the breakers, 80% of the AOVs, 20% of the check valves, 20% of the relief valves.
- First Hit Team has completed over 1850 minor corrective maintenance items.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Developed RP Handbook containing fundamental Radworker practices. Provided to all plant personnel.
- Radworker mockup training provided to all plant personnel.
- RP Technician (RPT) zone coverage implemented to provide readily accessible radiological support resources to Radworkers in the field.
- RPT empowered to lead significant radiological activities during outages.
- ALARA awareness initiatives accomplished which include; all Station Meetings, Station News Letter publications, ALARA banners and signs, daily/weekly/monthly exposure goals established.
- ALARA history files established with pre-outage ALARA planning and lessons learned in computer database.
- Radiological survey maps loaded into station computer network for all plant personnel to view.

EQUIPMENT PERFORMANCE

- Radiological hold points have been incorporated into work packages to provide in plant radiological information to the workers in the field.
- Improvements in station radiological postings and controls which include; release of areas that had been previously over posted as High Rad areas, in plant radiological survey maps for worker reference at elevators in the reactor and turbine buildings, elevated dose rate areas posted as such, phone booths with elevated dose rates posted, low dose rate areas and routes posted in reactor building (purple feet).
- Station's exit portal monitor detector sensitivities recalibrated to a higher efficiency for contamination detection.
- Water wall shielding installed at the station's RPA exit point to provide a lower, more stable background for contamination detection.
- Installation of PCM-2 personnel contamination monitor at RPA exit for radon discrimination.
- Upgraded the access control system to provide enhanced controls of personnel access to the RPA.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Maintenance and technical training program accreditation renewed by INPO.
- Training performance measures indicate improving trends including manager involvement.
- Licensee generated requal exam accepted; an industry first with 7/7 students passing.
- 1st Manual SCRAM since 1993; indicates conservative decision making beginning to have an effect.
- Event-free days clock established; higher standards set for identifying human performance issues.
- Station dose reduced from 750 person-rem to <520 person-rem (projected end of year).
- New operations management in place; driving "Operations in Charge" philosophy.
- Improved Work Planning - better schedule adherence with 3 week walkdowns in place.
- Completed remediation and reevaluation of site management personnel identified as low performers during Fall 1995 Personnel Performance Reviews.

EQUIPMENT PERFORMANCE

- HPCS/RCIC reliability improved.
  - U1 unavailability .0078 in 1994, .0036 in 1995
  - U2 unavailability .0410 in 1994, .0119 in 1995
- Safety system availability increased by more than 60%.
- 1 Auto scram in 1995 vs. 7 Auto scrams in 1994.
- U1/U2 Unplanned capacity loss (except RFO extensions) factor improved due to material condition initiatives.
- Reactor water chemistry significantly improved.
  - Average sulfates decreased from over 6 PPB in 1993 to ~3 PPB in 1995. Nov. 1995 average ~2 PPB
- Zinc Injection system installed on both units.
  - 5 person-rem saved during 1995 forced outage
  - 247 person-rem savings projected in 1996
- Radwaste significantly reduced (end of year projection - second quartile in industry).
- Reduction in contaminated floor area to 2.2% of total square footage (peaked at 15% during March).
- Removal of in plant RPA eating area has significantly reduced the number of RPA contraband occurrences in 1995.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Implemented performance indicators to monitor the work control process.
- Attained zero overdue maintenance items past due date. Reduced the GSIN SURV backlog of past dues from 1000 to zero.
- Utilization of RPTs from other ComEd sites during L2R06 has helped establish and promote teamwork while providing opportunities to share and exchange ALARA saving ideas.
- Operating Shift Supervisor Candidates to spend 6 month tours at INPO.
- Senior Operations Management reinforcing standards and expectations at Simulator 2 days per week during requal classes.
- Operations crew self assessment of performance.
- Lessons learned through peer review at Shift Engineers Meeting.
- Consolidated Operations Training under single lead integrated into Operations organization.
- Cross-site / Multi-site review of NLO training program implemented for December, 1995 class.

EQUIPMENT PERFORMANCE

- Departmental internal benchmarking performed to identify exposure savings for routine repetitive tasks. Station non-outage exposures have been reduced by >30%. Recent November non-outage personnel exposures received were a Station and ComEd BWR best at 9.26 person-rem.
- Utilized innovative Limerick concepts during recent radwaste modification project which included the use of scrubs and work management centers. Project completed 4 person-rem under goal.
- Alarming engineered controls installed on High Rad Access points. Improved performance in controls of High Rad Areas has been realized. As of December, 1995 no occurrences since February, 1995.
- Non-RPA area clean sweep performed in May with no contaminated material identified. No unauthorized radioactive material found outside the RPA since September, 1994.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

EQUIPMENT PERFORMANCE

- Extensive use of drywell camera system during L2R06 resulted in a savings of 15.7 person-rem.
- Electronic dosimeters installed on radwaste tanks to provide a remote method of determining tank levels. This has reduced Operator and RPT exposures.
- Installation of ports and hydrolyzing of main drain headers in reactor building have resulted in a 40 person-rem savings.
- Chemical decontamination of Reactor Recirculation and Residual Heat Removal systems completed during L2R06 to achieve a person-rem savings of 64 and 92 respectively.

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Complete Conservative Decision Making training for Engineering & Maintenance.
- Complete training for all supervisors in Quality First/Employee Concerns.
- Complete training of first line supervisors(FLS) to enhanced safety standards.
- Implementation of Improved Design Process.
- Implementation of "Design-It-Now" Process.
- Complete upgrade of Monthly Report and associated trending to provide a consistent basis for monitoring station performance.
- One SRO per crew to work in the work control center. Will aid in the screening, prioritization and pre-authorization of work. Important component to the Operations In Charge philosophy.
- Benchmarking by Operating Crew to Nine Mile Point.

EQUIPMENT PERFORMANCE

- Overhaul 1 Condensate/CB, 1 RR pumps, 2 RR FCVs, 1 RR discharge valve during L1R07.
- Clean U1 Suppression Pool.
- RR to be a focus for improvement in L1R07.
- Replace U1 Main Steam Isolation Valve outboard solenoid pilot valves and Main Steam Isolation Valve limit switches.
- Complete upgrades to U1 Main Turbine Supervisory Instrumentation.
- Implement design changes to increase main and aux transformer reliability.
- Overhaul 4 circulation water traveling screens, inspect 2 CW pumps.
- Elimination of 18 workarounds.
- 7 Unit 1 temporary system changes to be removed or converted to permanent installations.
- 97 design changes to be completed.
- Enhanced core shroud inspection U1.
- 6 year inspection on Main Generator.
- 5 year overhaul of 1A TDRFP.
- 6 year inspection of 1A DG.
- Eddy current test on feedwater heaters.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- L1R07 $\leq$ 264 Person Rem.
- Lost time accidents $\leq$ 1.
- Human Performance LERs $\leq$ 2.
- Overdue NTS items < 1.
- Achieve 100 % pass rate on operator license requalification exams.

EQUIPMENT PERFORMANCE

- Reduce outstanding temporary system changes to less than 32. Eliminating the most PRA significant first.
- Improve HPCS/RCIC reliability; Unit 1/2 unavailability $\leq$ .015.
- Install design changes to eliminate workarounds associated with high main steam line temperature.

Byron

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Fix It Now Team established 4/95.
- Formed task force in 1994 to improve station chiller performance.
- Formed working group in August, 1995 to develop standard definition for temporary alterations.
- 1995 Operations Human Performance Initiatives to reduce errors
  - Communication of Operating Department Expectations
  - Emphasis on Conservative Decision Making
  - Department/Shift Crew Self Assessments
  - Expanded use of Trending Techniques
- Improve personnel protective equipment usage compliance.
- Senior management compliance surveys initiated in 1995.

EQUIPMENT PERFORMANCE

- Shift operations sets FIN team priorities.
- Condensate/CB pumps improvements
  - Install modifications for oil line flex hoses
  - Perform Lube Oil Pump modifications
  - Overhaul/refurbish motors - four completed by 4/96
- Temporary Alterations
  - Inspected plant for non-identified temporary alterations
- Station Chillers
  - All major chiller units overhauled
  - Aggressive PM program established

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Formed a committee to improve security door event performance in March, 1995.
- Conducted Leadership III Training for all Site Personnel.
- Standards and Expectations Seminar for First Line Supervision Completed.
- Initiated Systems Certification training for Engineering Personnel.
- In 1995, 12 site personnel completed Nuclear Business Leadership training.

EQUIPMENT PERFORMANCE

- Improve Security Door Event Performance
  - Repeat Doors identified and repaired
  - Signs placed at doors with highest frequency of events
  - Events reported and discussed at Plan of the Day meeting.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Major Reduction in Operations Human Performance Events.
- Improved from 80% Compliance in 4th Qtr '94 to 92% in 3rd Qtr '95.
- Improved Security Door Event Performance.
- 1995 Target Performance at 16.5 Events/Month
  - Since Committee Development <16.5 Events/Month
- Field Observation Training for Site Supervisors completed.

EQUIPMENT PERFORMANCE

- Corrective Now Backlog decreased 20%.
- Station Chillers
  - Outstanding Chiller Performance in Summer 1995
  - 5 Modification Completed during 1995
- Activities Monitored
  - "HOT" Spots
  - System Flushes
  - Tanks Cleaned
  - Equipment Sumps Cleaned

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Expanded Fix It Now Team Work Scope.
- Expansion of FIN Team Planned 1/96.
- Continued Site Emphasis on Industrial Safety.
- Improve Security Door Event Performance
  - 1996 Performance Goal - 10 Events/Month
- Quarterly Follow-up Sessions for Standards and Expectations for First Line Supervision.
- 5 Additional Site Personnel to attend Nuclear Business Leadership Training.

EQUIPMENT PERFORMANCE

- 2 additional modifications will be completed on the station chillers.
- Unit 1 Thermo-lag effort will be completed by 6/96.
- Unit 2 Thermo-lag effort will be completed by 12/96.
- Unit 1 Cooling Tower Modification Completed 6/96.
- RTD Bypass Elimination Modification
  - Scheduled for both Unit 1 & 2 during 1996 Refueling Outages

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- 1996 ISAR Goal of 0.40
- 1996 PPE Compliance Goal at 95%
- 1996 Use of NBL trained personnel to improve site processes and performance.

EQUIPMENT PERFORMANCE

- Reduce Corrective Now backlog to 220 by 4/96.
  - Reduce and maintain backlog $\leq$ 175 by 12/96.
- Temporary Alterations
  - Set Target Maximum Less Than
    - 15 by 4/96
    - 10 by 6/96
- Condensate/Condensate Booster Pumps Improvements/Overhaul
  - Four Condensate/Condensate Booster Pumps Completed by 4/96
  - Remaining Pumps by Unit 2 Fall Refueling Outage

Braidwood

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Revised procedure adherence policy. Trained/tested all site personnel.
- Established on-shift procedure writers.
- Began site reinforcement sessions.
- Developed/communicated site human performance standards.
- Completed Expectations sessions for all First Line Supervisors.
- Started conversion process from Standard Technical Specifications to Improved Technical Specifications.

EQUIPMENT PERFORMANCE

- Equipment Focus List
- Operator Work Around List
- Material Condition System Status
- Work execution improvements
- Facility improvements
- Backlog/work execution indicators developed.
- Implemented the on-line maintenance policy.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Improved procedure compliance, 800 changes made during A1R05.
- Improved trend in Personnel Error LERs from 8 (1994) to 6 (1995 YTD).
- Improved trend in Consequential Human Events from 19 (1994) to 10 (1995 YTD).
- Improved OSHA Recordable Injuries from 23 (1994) to 19 (1995 YTD).

EQUIPMENT PERFORMANCE

- 4 Unit 2 and 2 Unit 1 CD/CB pumps available 100% since being refurbished.
- 2 U1 RH pumps leak free since new seals installed.
- 1 B SX pump leak free since outboard seal replaced (long standing problem).

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Implement Corrective Actions Group.
- Improve utilization of the Problem Identification system.
  - Provide timely feedback to initiators of PIFs
  - Improve trending of data to provide more meaningful information to line managers
- Continue communication of the Site Vision through:
  - Reinforcement Session
  - Plant walkdowns
  - Plant information meetings
  - RPM sessions
- Improve development of site personnel
  - Produce developmental plans for department heads.

EQUIPMENT PERFORMANCE

- Implement Work Week Managers.
- Implement OE/Lead Unit Planner usage improvement initiatives.
- Repair 2B RH seal.
- Replace OB WS seals.
- Complete U-1 condensate/condensate booster pump refurbishments.
- Refurbish 1 Aux Building exhaust fan.
- Repair liquid system leaks.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- Continue improving trend in Personnel Error LERs to ≤ 2 by April 30, 1996. (1996 Goal - 5).
- Continue improving trend in Consequential Human Errors to ≤ 4 by April 30, 1996. (1996 Goal - 13).
- Continue reducing OSHA recordable injuries to ≤ 5 by April 30, 1996. (1996 Goal - 14).
- Extend time between events to > 50 days.
- Maintain zero significant overdue action items.

EQUIPMENT PERFORMANCE

- Planned maintenance will not increase PRA by more than a factor of 1.3.
- Refurbished Condensate/CB pumps will be operating or available 95% of the time.
- Disposition an average of 1 operator workaround per month.
- Repair 80 oil leaks (209 identified).
- Repair 100 other liquid leaks (263 identified, e.g., borated water, pure water and cooling water).
- Ability to operate VA exhaust fans in each plenum.

Zion

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- Instituted a "Just in Time" training concept to provide immediate training on complicated or infrequently performed tasks.
- Undertaken a two year partnership with EdF to improve outage planning and execution.
- Increased the emphasis on industrial safety.
- Developed a computer program to enable the operating departing to identify issues that they feel are operator work arounds.
- Elevated Operations Standards to enhance Control Room communications (i.e., 3-way repeat back/phonetic alphabet); perform more frequent pre-job briefings; and increase expectation for shift turnovers and shift briefings; logkeeping, control board walkdowns.
- Successfully obtained INPO accreditation renewal for the Maintenance and Technical training programs.
- Installed several new senior managers to increase the rate of plant improvements by focusing on safety, material condition, standards and getting work done.

EQUIPMENT PERFORMANCE

- Engineering personnel performed a complete walkdown of all plant systems to identify material condition concerns and incorporate them into the work planning process.
- Established a "Fix it Now" (FIN) Team to respond quickly to some material condition concerns and to address the needs of the operating unit, while the other unit is being refueled.
- Established a senior management individual as the owner of the overall management of material condition.
- Established a senior management individual as the owner of the overall management of operator workarounds.
- Incorporated the VPOP valve packing program into the mechanical maintenance department.
- Continue to use the Combined Facilities Maintenance group to expedite repairs to non-safety related equipment.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- NRC has received licensing submittal for TSIP.
- TSIP technical reviews completed by plant and corporate staff.
- 1996 Business Plan developed by bargaining unit and management personnel focuses on improvements to human and equipment performance.
- Elevated Fuel handling performance standards by emphasizing procedure adherence and compliance; and increased training.
- Increased the emphasis on FME controls by increasing the level of management attention and knowledge level of the worker.

EQUIPMENT PERFORMANCE

- "Clean Sweep" activities have met the milestones for 1995.
- Action plan and funding established to decommission some of the outdated, and difficult to repair radiation monitors.
- Higher standards were employed during the return to service of plant systems during the Unit 1 outage:
  - Previously acceptable leakage on the diesel generators was not tolerated
  - Additional time was allotted to repair main generator seal oil
  - Performed an extensive flush of the turbine oil system.

1. SIGNIFICANT WORK ACTIONS COMPLETED OVER THE PAST 6-12 MONTHS
(continued)

EQUIPMENT PERFORMANCE

- Replaced control system on all emergency diesel generators.
- Performed extensive repairs to Unit 1 Steam Generators including sleeving, tube re-rolling and plugging.
- Replacement of nuclear instrumentation with Gamma-Metrics.
- Circulation Water System review completed.
- Supported 7 week NRC safety related review.
- Instituted the 12-week rolling schedule philosophy to perform work; actual implementation is scheduled for 1/8/96.
- Developed actions plans to address the requirements of the Maintenance Rule.
- Developed a plan to manage the backlog of safety related PM's.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS

HUMAN PERFORMANCE

- "Just in Time" training has enabled the following results:
  - Reduced the time to perform electrical bus outage surveillances from 3 days to 1 day
  - Reduced personnel exposure by 40% on the repairs to the guide funnel for the control rod thermal sleeve
  - Identified the need for special tools in the repair of Masoneilan and Copes Vulcan AOVs
- Developed a training concept called STORE, "Shift Training on Recent Events". During their training week, the crew reviews the logs from their last five weeks on shift and discuss and critique their response to actual events.
- Dramatically improved Fuel Handling performance during the Unit 1 outage with no significant PIFs realized.

EQUIPMENT PERFORMANCE

- "Fix it Now" team has completed 750 actions to date.
- The 400 action items that were identified during the engineering walkdown have been reviewed and prioritized in the work control system.
- "Clean Sweep" efforts have passed the following milestones:
  - 560 elevation of TB cleaned, painted, some insulation replaced, etc.
  - Unit 1 and 2 ECCS pumps and cubicles reclaimed to allow entry without protective clothing
  - About 50,000 man-hours of work expended from several crafts
  - Approximately $1.85 million spent
- Combined Facilities Maintenance Group has completed over 2000 activities to date.
- 154 valves were repacked during the Unit 1 refueling outage utilizing the VPOP method.

2. SIGNIFICANT PERFORMANCE RESULTS REALIZED OVER THE PAST 6-12 MONTHS
(continued)

HUMAN PERFORMANCE

- Industrial safety rate currently at 0.79. This is the best performance in the last three years.
- Regarding FME, QC observations of jobs, during Z2R13, 3% of the 782 observations indicated FME concerns; during Z1R14, 2% of the 1763 observations indicated FME concerns.
- No LCO clock violations either during required or voluntary entry into LCO conditions.
- 86 of 196 Operator workarounds have been addressed- Operator workaround is one of the criteria evaluated as part of the 12-week rolling schedule.
- Improved control of plant systems by eliminating human OOS and enforcing the temporary lift procedure.

EQUIPMENT PERFORMANCE

- Zero overdue safety related PM's, (by 1/1/96) down from the initial data point of 70.
- Safety system performance rate at 0.012.

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96

HUMAN PERFORMANCE

- Complete a self-assessment of the Operator training programs.
- Evaluate the type of management development training program that will be used to enhance the first line supervisor (MARC training).
- Eleven individuals will have completed the Nuclear Business Leadership class.
- Develop and begin implementation of the Standards and Expectations Seminar for First Line Supervisors.

EQUIPMENT PERFORMANCE

- Expand the size of the FIN team and use them to evaluate action requests prior to entry into the database.
- Implement the 12-week rolling work schedule on 1/8/96.
- Refurbish the following pieces of equipment:
  - 2A AFW pump (LCO Maintenance)
  - 2A Heater Drain Pump
  - OD AB Exhaust Fan
  - Begin removal of IA compressors for installation of new compressor throughout the year

3. SIGNIFICANT WORK ACTIONS TO BE COMPLETED BY 4/30/96
(continued)

HUMAN PERFORMANCE

- Full implementation of the post-job briefing activity.
- Complete training on the visible STAR self-check method in the Operating Department.
- Evaluate the lessons learned that were gathered in "real time" from the recent Unit 1 refueling outage - commitments and corrective actions for some of the items have already been written.
- Implement the results of the Arthur Anderson commitment management study.
- Review and implement the corrective actions that resulted from the Level 2 PIF investigation of the OOS process.
- Evaluate the suggestions to improve outage performance that develop from the first phase of the EdF partnership.
- Implement FPI process for performance data trending.
- Review, revise and/or develop Station procedures to support implementation of TSIP.
- Accomplish the Z2R14 outage planning milestones.

EQUIPMENT PERFORMANCE

- Establish the following measurement standards to evaluate the 12-week schedule:
  - A decrease in overdue of non-safety related PM's from the initial value of 500
  - no new overdue PM's
  - decrease in the WR backing from the initial value of 1350
- Complete an evaluation of the 1st cycle of 12 Week Rolling Schedule with Lessons Learned Incorporated into 2nd cycle.

4. SIGNIFICANT PERFORMANCE RESULTS TO BE REALIZED BY 4/30/96

HUMAN PERFORMANCE

- Improve industrial safety accident rate (ISAR) $\leq$ 0.5
- Improve trend in Operations human performance errors.
- Achieve a goal of 40 days between events .
- Attain less than 3 personnel error LERs.
- Achieve a PCE rate less than 0.9/1000 hours in the RCA.
- Maintain zero overdue investigations and corrective actions.
- Achieve greater than an 88% pass rate on the initial license operator exam.

EQUIPMENT PERFORMANCE

- Achieve a capacity factor of 90% on Unit 1.
- Attain key safety system availability levels at or above industry standards.
- Improved schedule adherence and as a result, getting more work done
  - no new overdue PM's
  - decrease in the number of backlogged WRs from the initial data point of 1350
  - decrease by half the number of overdue non-safety related PM's from the initial data point of 500