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ComEd

January 13, 1997

JSPLTR #97-0005

Mr. Hugh L. Thompson
Acting Executive Director of Operations
U. S. Nuclear Regulatory Commission
Mail Stop 17G21
Washington, DC 20555

Subject: Interim Response to Dresden Independent Safety Inspection Report

Reference: (a.) Letter from J. M. Taylor, NRC Executive Director for Operations, to J. J. O'Connor, Chairman and Chief Executive Officer, ComEd, dated December 24, 1996, transmitting report of Independent Safety Inspection of Dresden Station.

(b.) Letter from T. J. Maiman, ComEd Executive Vice President, to A. Bill Beach, Administrator NRC Region III dated November 12, 1996.

(c.) Letter from A. Bill Beach, Administrator NRC Region III to J. S. Perry, Site Vice President, Dresden Station dated November 21, 1996.

Dear Mr. Thompson:

ComEd has received and reviewed the report of the Independent Safety Inspection (ISI) of Dresden Station (reference a). We were very pleased that the inspection identified improvements in all the areas that were inspected, but are also strongly aware that there are weaknesses which remain to be addressed. We are in the process of developing a comprehensive set of actions to address the deficiencies identified by the ISI, and intend to provide the NRC with a response describing those actions by February 26, 1997.

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In the meantime, we are already implementing or have defined actions in response to several of the key ISI findings. A number of these actions have been underway for some time, while others were developed following the interim debriefs and the public exit meeting held with the NRC ISI team. These actions are summarized below.

Corrective Action Program

The ISI noted that corrective actions succeeded in resolving several historical performance problems and problem identification had generally improved. However, the ISI also found weaknesses in identifying and effectively resolving problems, resulting in repetitive performance problems. These included design control problems, testing weaknesses, and problems with control of radioactive material and high radiation areas. We have taken several steps to improve the identification and correction of problems, and several more are planned. These include:

- In April 1997, Dresden Station will implement a new Corrective Action Program which has been developed by representatives from all six (6) Commonwealth Edison nuclear sites and the corporate office. These representatives reviewed state-of-the-art corrective action programs in the industry to establish a new corrective action process for the entire ComEd nuclear program. The new process includes several improvements over the current program. It clearly delineates and standardizes the threshold for problem identification through Performance Improvement Form (PIF) initiation, and also incorporates a common PIF database that will provide the site with greater versatility in coding, sorting, and analyzing PIF data (PIFs are the main problem-reporting mechanism used at Dresden Station). The corrective action process team has also developed a new procedure that outlines trending analysis requirements, including a review of industry operating experience for operational events. The new corrective action process will incorporate human error reduction methodology developed by Failure Prevention International (FPI),

including FPI coding and root cause analysis techniques. Included in FPI methodology are problem identification and trend analysis techniques. The new corrective action process will also utilize dedicated root cause analysts and experts, specifically trained and qualified in root cause analysis techniques.

- Site personnel will receive training on the new corrective action process prior to implementation in April, 1997. Additionally, specific training for FPI methodology concerning human error reduction and organizational & programmatic issues will be conducted as follows:

1 Day	Senior Managers and Department Heads	Completed	January 8, 1997
4 Days	Root Cause Experts	Scheduled	January 14-17, 1997
2 Days	First Line Supervisors	Schedule under Development	
1 Day	All Station Personnel	Schedule under Development	

- Dresden Administrative Procedure (DAP) 02-38, *Station Self-Assessment*, has been revised to provide an easier-to-follow format. Representatives from several of the Station line organizations participated in the development of the revised procedure, which was implemented on January 6, 1997. Training on the revised procedure will be conducted for department self-assessment coordinators and department heads prior to their first scheduled self-assessment of 1997.

- To clarify thresholds at which problems are to be reported, Dresden Administrative Procedure (DAP) 02-27, *The Integrated Reporting Process (IRP)*, has been revised to provide more concise direction for site personnel regarding Performance Improvement Form (PIF) initiation criteria. This revision also incorporated Maintenance Preventable Failures (MPF) as a criterion for PIF initiation. This procedure revision became effective on October 25, 1996. Site personnel are being trained to ensure understanding of the revised initiation criteria.

- Dresden Administrative Procedure (DAP) 02-29, *Corrective Actions Effectiveness Review*, has been revised to address several issues. Revision 4 to the procedure was implemented on November 1, 1996. Included in the revision was the elimination of the requirement to initiate a PIF when a corrective action was determined to be ineffective. Instead, the new revision now requires that a Nuclear Tracking System (NTS) item (a higher tier tracking item requiring more formal closure) be initiated to track and address the issue. This revision also provided additional guidance on methods for conducting the effectiveness review and determining corrective action effectiveness. The revision also provided for the new requirement that all Level 2 Root Cause Investigation corrective actions, and all corrective actions associated with Licensee Event Reports (LERs), be subjected to effectiveness review under this procedure, and that effectiveness reviews conducted for these corrective actions are reviewed and approved by the Corrective Actions Review Board (CARB), thus providing a multi-disciplined review. During the last half of 1996, the number of repeat events as a percentage of all significant events declined substantially (see Attachment 1).

- Dresden Engineering management has taken several steps to encourage PIF initiation within the Engineering Department. Engineering Senior Management met with engineering organization personnel in order to communicate expectations for PIF initiation and review of the PIF database for 1996 was performed. Applicable Engineering procedures will be revised by January 31, 1997, to clearly delineate management expectations for PIF generation by Engineering personnel when design discrepancies are identified. During the first eight (8) months of 1996, the engineering organization initiated an average of 49 PIFs per month. During the last four (4) months of 1996, the average increased to 93 PIFs per month, almost double the previous number, indicating that personnel are now more sensitive to PIF initiation requirements. We will continue to monitor PIF initiation levels to ensure that problem identification and reporting continue.

- To ensure strong root cause analysis in the area of Radiation Protection (RP), a dedicated Root Cause Specialist has been assigned. This individual is responsible for error trending and performance of quality self assessments, and will be included in the review cycle of corrective action approval. This individual also ensures that actions taken for NTS item closure are complete and meet the intent of the commitment. This individual will remain on staff until RP department performance is satisfactory in the area of root cause and corrective actions.

- Several actions have been initiated to prevent recurrence of problems with High Radiation Area (HRA) Control. The station has reduced the number of HRA events in the past several years (see Attachment 2). Actions recently initiated include:

  1. Conducting awareness training for Operations, Maintenance and Engineering personnel which will include: discussion of recent high radiation area control problems; discussion of the significance of the program for meeting Technical Specification requirements, and management expectations; and review of sections of DAP 12-04, *Control of Access to High Radiation Areas*, ensuring understanding of the worker's role in controlling high radiation areas.

  2. Assignment of an owner for the HRA control program to ensure corrective actions are implements.

  3. The RP Greeter, who is assigned to check worker understanding of RWP requirements and limits, will be tasked with reminding workers of high radiation area control responsibilities prior to them entering the Radiologically Protected Area (RPA). This will continue until management determines that worker awareness of these responsibilities is consistently displayed.

4. Six former High Radiation Areas have been downposted and controls reduced. RP plans to complete several administrative changes and source term reduction actions to further reduce the number of locked high radiation areas. Reducing the number of these areas simplifies control and reduces the potential for control problems.

- Actions are being taken to prevent recurrence of problems with Radioactive Material (RAM) Control. The station continues to trend in the right direction (i.e., the number and frequency of events continues to decrease -- see Attachment 3). Corrective actions to control RAM include:

  1. A pilot program was developed to perform low level surveys on dumpsters and vehicles leaving the site protected area gate in order to provide extra assurance that uncontrolled RAM does not leave the site.

  2. A benchmarking trip to a SALP 1 plant was conducted in November, 1996. Several good practices regarding control of RAM are being adopted at Dresden.

  3. A campaign was completed to ensure awareness of station personnel of RAM control problems and the need to better control RAM.

  4. Procedures have been revised to strengthen requirements for tagging packaged material in all areas. This will help prevent inadvertent movement of RAM.

  5. The RP Greeter is being utilized to identify potential RAM coming in the plant to prevent unplanned or unauthorized RAM movement.

6. RP will reinforce the policy for locking out material from leaving the plant. Permission is now required from the RP Shift Supervisor prior to removing material from the RPA.

7. A complete listing of satellite RPA's (including sea-vans) has been developed. Elimination of these RPAs will proceed in 1997.

Design Control

The ISI identified problems in the area of design and calculation control. On November 12, 1996, ComEd submitted its plan of action for ensuring appropriate design control (reference b). This plan was confirmed by an NRC Confirmatory Action Letter on November 21, 1996 (reference c). Main elements of this plan include:

- An Engineering Assurance Group consisting of senior ComEd personnel and experienced outside experts was established to provide oversight of key engineering activities to ensure that design activities validate the Station design basis. This group has been functioning since November 18, 1996. In December, 1996, the Dresden Site Quality Verification Department performed an audit of Engineering Assurance Group activities; no concerns were identified.

- Nuclear Engineering Procedures will be revised to provide specific direction on action (including instructions for documentation and reporting problems on PIFs) to be taken whenever a potential design basis discrepancy is identified. These revisions and associated training will be completed by January 31, 1997.

- The Nuclear Engineering Procedure on control of calculations has been revised to provide clearer guidance, expectations, and directions on the review, control, and reconstitution/verification of calculations for equipment or portions of systems affected by new modifications. These

revisions and initial associated training were completed on November 26, 1996. Follow-up training for personnel not available at that time will be completed by January 31, 1997.

- We have assembled a dedicated team of senior experienced engineering personnel from S. Levy Inc., Mollerus Engineering, Sargent & Lundy, and Duke Engineering and Services to identify and review key operating parameters against system calculations for the 12 most risk significant systems. We are currently on schedule to complete this screening by February 28, 1997.

- A program of audits of the Nuclear Steam Supply System supplier and selected Architect/Engineers (A/Es) has been established to determine quality of design control and calculation quality. The audit of the principal A/E has been completed which identified instances of technical errors and administrative and review process weaknesses. That A/E is installing improved programs and procedures for design control and calculation quality. Several additional audits are scheduled during 1997.

As required by the Confirmatory Action Letter, ComEd is providing monthly reports to Region III on the progress in implementing these actions, and results achieved.

Emergent Work and Work Management

The ISI identified improvements in maintenance processes, the knowledge, skills, and abilities of maintenance personnel, and a significantly improved overall plant material condition, but also noted that the effectiveness of many of these improvements was reduced by the number of emergent work activities. Several steps have been taken to reduce the amount and impact of emergent work and to improve work management so that both emergent and planned work is completed more quickly and effectively. These steps include:

Emergent Work

- A review was performed to determine which systems were most frequently associated with emergent work. From this review it was concluded that, in general, systems with higher backlogs of corrective maintenance work accounted for most emergent work. In particular, a significant proportion of emergent work has been attributable to the Fire Protection System and the Off-Gas System, both of which have had substantial corrective maintenance backlogs. Accordingly, action has been focused on these systems.

  1. Fire Protection System - - a major contributor to difficulties in reducing fire protection system backlogs was the inability to isolate system branches due to leaking branch valves. The valves have been repaired and the Fire Protection System corrective maintenance backlog has been substantially reduced. Further reductions are planned during 1997.

  2. Off-Gas System - - a task force was established during the third quarter of 1996 to reduce the Off-Gas System backlog and eliminate long-standing materiel condition deficiencies on the system. An action plan with short and long-term goals was developed to provide operations with two fully automatically operable system. Although some Off-Gas System planned actions have been carried over to the first quarter of 1997, several items in the plan have been accomplished on Unit 3 to improve system materiel condition. Examples are: the Pressurized Drain Tank vent line has been cleaned, the B Train Recombiner Drains have been cleared of obstructions, the B Train Cooler drain lines have been cleared, and the B Train Chiller Motor has been overhauled.

The Station experienced a high level of emergent work in the weeks following startup of Unit 2; in September, 1996, but emergent work levels have declined since that time. In October, 1996, there were a total of 141 emergent work items for the Station; this level was reduced to less than 70 items per month in November and December 1996.

Work Management

- To reduce work start delays, the Operations Department in September, 1996 began providing 24 hour support coverage to help prevent delays due to preparation and/or hanging of OOS clearances. In addition, in November, 1996, the Operations Department implemented a process for pre-approval of start of work for specific work packages, which eliminates delays while waiting for work-start approval at the Work Execution Center.

- Work planning and scheduling problems are addressed weekly during the Work Control Improvement and Schedule Accountability meeting chaired by the Maintenance Superintendent. The establishment of task forces to identify process problems and develop improvement initiatives in the Pre-Define and Work Package Closure portions of the Work Control Process are examples of actions taken from this meeting.

- In December 1996, Maintenance General Supervisors have been functionally assigned to the Work Planning organization (under the Work Planning Superintendent) and will function as direct supervisors to the work planners, work group coordinators, and preventive maintenance coordinators for each of their respective disciplines/departments. The participation of the Maintenance General Supervisors improves communication, resource prioritization, and overall work coordination.

- In September 1996, a Work Week Planner was assigned to assist the Work Week Manager for work schedule planning in the five weeks prior to the time the work is to occur. This permits earlier and more rapid schedule adjustments in the weeks before work begins, helping to avoid last-minute changes.

- In December 1996, Preventative Maintenance (PM) coordinators were returned to Work Control from Engineering to support the work group coordinators and the work analysts and ensure proper and expeditious planning of preventative maintenance.

- Since November 1996, Materials Management Engineers have been located in the work control offices to resolve issues on materials and their applications. This change is expected to improve work coordination and schedule adherence, and to reduce rework associated with material related problems.

- Beginning in July 1996, experienced contracted Scheduling and Planning Superintendents were hired to provide hands-on direction and management of coordination issues and production barriers. Additionally, these personnel will help develop ComEd successors capable of sustaining the operations of the organization.

- In November 1996, scheduling was consolidated under one program with personnel assignments to perform specific functions within daily and outage evolutions. This change supports implementation of a common coding structure on outage and daily schedules to help minimize administrative complexity and work delays during entry and exit from outages.

- Operations has assigned a Control Room Unit Supervisor (SRO-licensed) to perform work bundling during work window planning. This will improve risk minimization and efficiency in establishing out-of-service boundaries, and ensure greater focus on configuration control during work planning.

- Additional contract support has been brought in to develop performance measurement and management tools in the area of work management. A new set of these tools will be designed to provide real-time information to work control and maintenance management to highlight performance strengths and weaknesses, and is expected to be in use by the end of March, 1997. Benefits expected include improved work management decisions, better resource allocation and utilization, and an increase in the rate of work completion.

Understanding of Management Expectations

The ISI determined that Dresden management efforts to reinforce individual accountability for safety performance and to improve capabilities of station personnel appeared to be effective in addressing long-standing obstacles to performance improvement, and that global expectations such as accountability, strictly adhering to procedures, and teamwork were reinforced through multiple methods of communication. At the same time, the NRC ISI team noted that, due to management, supervisory, and process changes, management expectations for the accomplishment of work were not well understood in some cases, and that communication of overall standards and expectations was noticeably less visible in the design engineering area. Actions recently taken or planned to communicate overall standards and ensure that work performance expectations are clearly understood include:

Operations

- Operations has established a fixed period of time in normal cycle training to discuss and reinforce management expectations. Also a fixed amount of time has been established to cover human performance trends/issues as well as corrective actions with are being implemented so that operators understand and support these activities.

- Operations Shift Managers utilize routine crew briefs to reinforce management standards and personal accountabilities associated with those standards. This is done by a challenging/questioning approach directed to the operators.

- Daily orders are generated by senior operations managers. These orders cover specific concerns, philosophy, direction, standards and decisions made which affect the department. All operators are required to read these daily orders as part of the turnover process.

Maintenance

- Since September 1996, all new maintenance supervisors have been provided training on Station and Maintenance Standards and Expectations. This has specifically included expectations in the RP area.

- Maintenance and Station Standards and Expectations are reinforced through:

    1. Weekly staff meetings between the Maintenance Superintendent and maintenance management and supervision.

    2. Pre-job briefings provided to craft personnel by maintenance supervision.

3. Scheduled weekly shop meetings between maintenance masters, supervision and craft personnel.

- Worker knowledge and compliance to Standards and Expectations is further being monitored and reinforced during ongoing Management By Walking Around (MBWA) tours by maintenance management and supervision. Coaching and/or remedial corrective actions are being taken during the tours to correct identified deficiencies immediately.

- In October 1996, Maintenance implemented a new policy as part of the Maintenance Supervisor Policy Manual to address expectations for procedure deficiency feedback to the procedure writers. This includes a form to attach to the affected procedure to explain why revision to the procedure is necessary and for routing of the requested revision.

- In December 1996, Maintenance has also implemented a required reading process and policy as part of the Maintenance Supervisor Policy Manual to ensure understanding of changes to programs and processes as well as an additional method for communication of Standards and Expectations to management, supervision and craft.

- Systems training is currently being conducted for first line supervisors and senior workers in Maintenance to ensure understanding of significance and impact of work being performed and facilitate better appreciation of the importance of complying with work performance expectations.

Engineering

- Since June 1996, weekly performance review/accountability meetings have been conducted with engineering department management and engineers to review the status of system improvement plans, projects and programs.

- An engineering expectations meeting is scheduled for January 22, 1997 with the Site Vice President, Site Engineering Manager, Engineering Chiefs and Engineering Vice President to review and ensure common understanding of significant issues, site and corporate Engineering deliverables, goals, projects, indicators and plans.

- During 1997, Engineering Performance Improvement training will be developed and implemented. These sessions will be attended by all Engineering Department Personnel and will focus on reinforcing improved standards and expectations for the Engineers.

- A three year plan for Engineering will be established by the end of the first quarter, 1997. The plan will focus on those activities which will improve the accountability, responsiveness, and professionalism of the Engineering organization.

- An Engineering Standards and Expectations Handbook will be issued by the end of the Second Quarter, 1997. The handbook will clearly enumerate standards and management expectations for Engineering Department personnel.

Radiation Protection

- To ensure radiation workers understand radiological requirements, since October 1996, a "Greeter" has been established at the entrance to the RPA. The Greeter's function is to challenge workers prior to entering the plant to ensure that they are familiar with the requirements of their Radiation Work Permit (RWP) and to remind workers of high radiation area control responsibilities. The importance of RWP compliance has also been communicated to the station in the form of tailgate briefings and daily newspaper articles.

- To improve the standards of the RP Technicians and Staff, the level of oversight has increased significantly. A Senior Manager Monitoring Watch occurs on day shift where four hours is spent each day observing the RP department performance. Also, the remainder of the RP staff performs its own monitoring watch on the back shifts.

- In September 1996, new first line supervisors in RP and Maintenance were provided with training on standards and expectations for the performance of radiation work at Dresden Station.

As noted above, we have taken or have planned action to address a number of the most important issues identified by the NRC ISI team. We are implementing and tracking these actions through our Nuclear Tracking System and/or the Dresden 1997 Business Plan, and are reviewing progress in our monthly performance assessment meetings.

We recognize that, aside from these key issues, there are a number of more specific problems that were identified by the ISI, and careful evaluation of these issues is being performed. Several actions are underway or being developed to address those problems. Also, particularly in the area of design control, ComEd is reviewing the ISI results to determine what additional corporate-wide actions are warranted.

These issues will be addressed in our comprehensive final response to the ISI report. In the meantime, please call me should you have any questions or require any further information.

Sincerely,

J. Stephen Perry
Site Vice President
Dresden Station

JSP/WEB:lad

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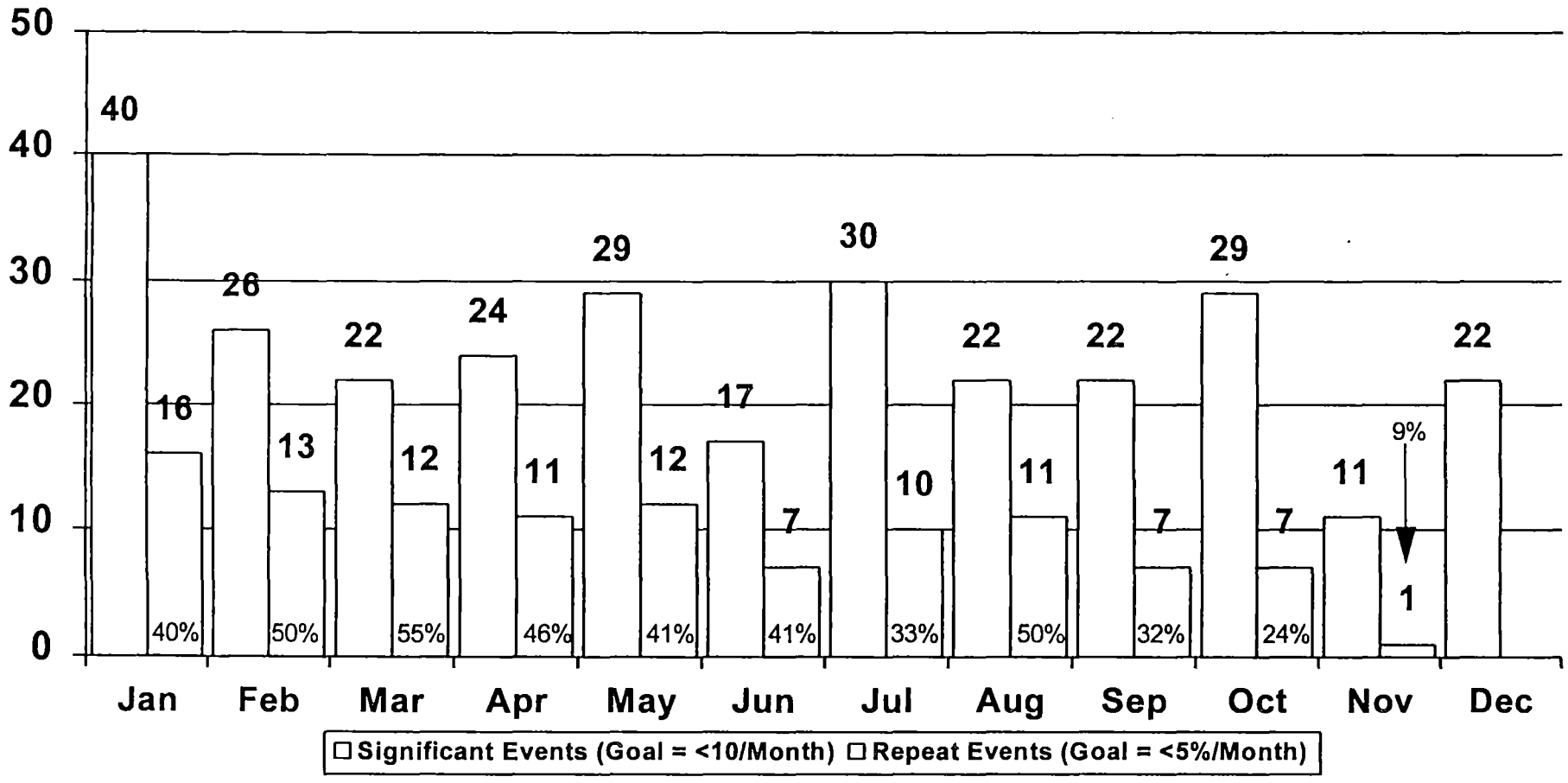
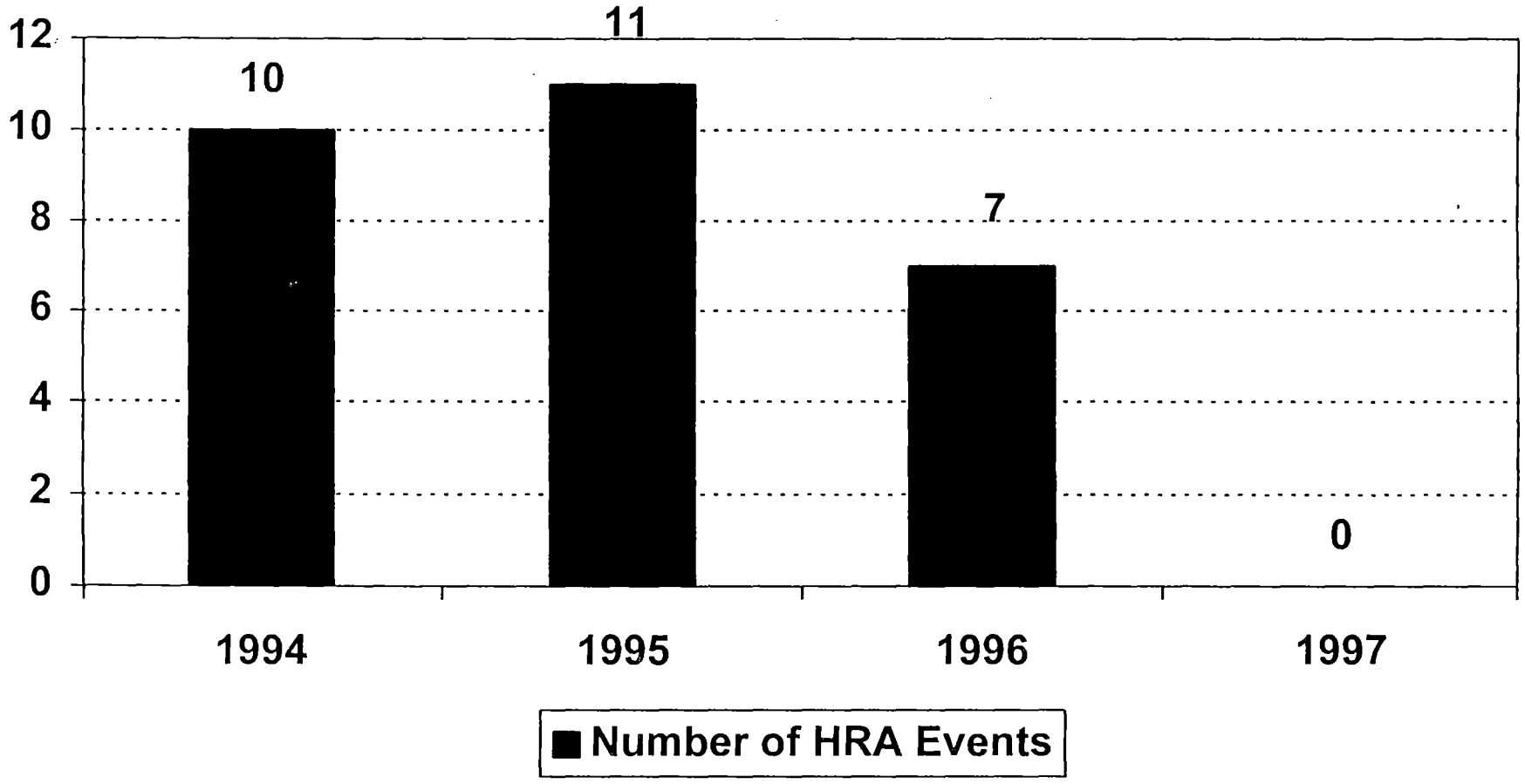
Attachment 1

Level III Repeat Events



Attachment 2

High Radiation Area Events



Attachment 3

Radioactive Material Events