



April 15, 1997

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

Subject: Braidwood Units 1 and 2 (NRC Docket Nos. 50-456/457)
Byron Units 1 and 2 (NRC Docket Nos. 50-454/455)
Dresden Units 2 and 3 (NRC Docket Nos. 50-237/249)
LaSalle Units 1 and 2 (NRC Docket Nos. 50-373/374)
Quad Cities Units 1 and 2 (NRC Docket Nos. 50-254/265)
Zion Units 1 and 2 (NRC Docket Nos. 50-295/304)

Transmittal of Commonwealth Edison Company's (ComEd)
Definitions of Performance Indicators and Associated Performance
Criteria Related to 10 CFR 50.54(f) Response Dated March 28, 1997

- Reference: (1) Commonwealth Edison Company's (ComEd) Response to the
U.S. Nuclear Regulatory Commission (NRC) Request for
Information Pursuant to 10 CFR 50.54(f) Regarding Safety
Performance at ComEd .
- (2) H. Thompson letter to J.J. O'Connor, dated January 27, 1997;
"Request for Information Pursuant to 10 CFR 50.54(f)
Regarding Safety Performance at Commonwealth Edison
Company Nuclear Stations."

Dear Mr. Callan,

In Reference (1) Commonwealth Edison indicated that we would provided
additional information to the NRC staff regarding the performance indicators we
planned to use in response to the NRC's request for additional information
pursuant to 10 CFR 50.54(f) (Reference 2)

The purpose of this letter is to provide ComEd's definitions and performance
criteria for each of the indicators listed in Reference (1), Section 4.7.2. Attached
are the definitions for the previously selected division-wide 25 performance
indicators and associated performance criteria selected to measure our progress
towards improved performance. As a result of experience gained in monitoring
these indicators, the definition of Collective Radiation Exposure has been

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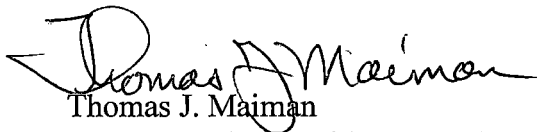
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modified. Reference (1) stated that this indicator would be measured on a site basis. This has been subsequently changed to monitor on a unit basis. Additionally, dose accumulated from Dresden Unit 1 will not be included in this indicator.

Hope you find this information useful in anticipation of our meeting with the NRC Commissioners on April 25, 1997.

Sincerely,



Thomas J. Maiman
Executive Vice President and Chief Nuclear Officer

Enclosure: Commonwealth Edison Performance Indicator Definitions
and Criteria

cc: H. Thompson, Deputy Director for NRR
A. Beach, Regional Administrator - RIII
R. Capra, Project Directorate - NRR
R. Assa, Braidwood Project Manager - NRR
G. Dick, Byron Project Manager - NRR
J. Stang, Dresden Project Manager - NRR
D. Skay, LaSalle County Project Manager - NRR
R. Pulsifer, Quad Cities Project Manager - NRR
C. Shiraki, Zion Project Manager - NRR
Braidwood, Senior Resident Inspector
Byron, Senior Resident Inspector
Dresden, Senior Resident Inspector
LaSalle, Senior Resident Inspector
Quad Cities, Senior Resident Inspector
Zion, Senior Resident Inspector
Office of Nuclear Facility Safety - IDNS

Commonwealth Edison Performance Indicator Definitions and Performance Criteria

A. INDUSTRY WIDE INDICATORS

The following seven indicators, used by the NRC and World Association of Nuclear Operators (WANO), provide a high level safety overview, an indication of overall effectiveness in achieving improved performance results, and permit evaluation of whether we are reaching our overall goal of operating each site at a level consistent with it's industry peers.

1. Automatic Scrams While Critical

The number of unplanned automatic scrams per year while critical. Examples include scrams from unplanned transients, equipment failures, spurious signals, or human error. Scrams occurring during the execution of procedures in which there was a high chance of a scram occurring, but the occurrence of a scram was not planned are included.

Performance criterion: More than one scram per unit per year.

2. Safety System Actuations

Manual or automatic actuations of the logic or equipment of either certain Emergency Core Cooling Systems (ECCS) or, in response to an actual low voltage on a vital bus, the Emergency AC Power System. Input for this indicator are derived from LERs and supplemented by 50.72 reports. In determining which events should be counted by this indicator, the following conventions are used:

1. Only actuations of the High Pressure Injection System, Low Pressure Injection System, or Safety Injection Tanks are counted for pressurized water reactors (PWRs). For boiling water reactors (BWRs), only actuations of the High Pressure Coolant Injection System, Low Pressure Coolant Injection System, High Pressure Core Spray System, or Low Pressure Core Spray System are counted. Actuations of the Reactor Core Isolation Cooling System are not counted.

2. Actuations of Emergency AC Power Systems are counted only if they were in response to an actual low voltage condition on a vital bus. Specifically, actuations are counted only if the Emergency AC Power System's output breaker closed, or should have closed, to power a dead bus. Actuations resulting from momentary low voltage conditions that do not result in emergency output breaker closure are not counted.

3. Logic actuations of any of the equipment associated with the specific ECCS or Emergency AC Power System are considered necessary and sufficient to constitute a data count. For example, if only a valve in a system is commanded to move to its emergency operational position, this is counted as an actuation. A pump does not have to be commanded to go to its emergency mode of operation and fluid does not need to be injected for an occurrence to be counted.

4. Only one ECCS actuation is counted in any one occurrence, even if multiple ECCS systems actuate during the occurrence. For example, actuation of both the High Pressure Injection and the Low Pressure Injection Systems at a PWR during the same occurrence counts as only a single ECCS actuation.

5. Only one Emergency AC Power System actuation is counted in any occurrence, even if multiple emergency generators actuate during the occurrence. For example, actuation of all four emergency diesel generators (EDGs) at a unit counts as only a single actuation for that occurrence.

6. Occurrences involving actuations of both an Emergency AC Power System to power a dead bus and an ECCS are given a count of two, one for the Emergency AC Power System actuation and one for the ECCS actuation.

7. At multi-unit sites that share equipment (e.g., a swing EDG or shared buses), actuations are counted and assigned to the unit at which the actuation signal or loss of power originated. If the signal source cannot be associated with one unit, the actuation is assigned to both units.

Performance criterion: More than one safety system actuation per unit per year.

3. Collective Radiation Exposure

The total effective dose equivalent (TEDE) received by all personnel coming on site.

TEDE includes "unmonitored" or "tracking" dose for contractors and visitors during the quarter. TEDE is the sum of the deep dose equivalent (DDE) and committed effective dose equivalent (CEDE). These terms are defined in 10 CFR 20.1003.

Report the total per unit value (at Dresden, exclude Unit 1).

Performance criterion: Projected or actual results exceed the annual year end exposure goals expressed on a per unit basis.

4. Unit Capability Factor

The ratio of available energy generation over a given time period to reference energy generation over the same time period, expressed as a percentage with both energy generation terms determined relative to reference ambient conditions.

Available energy generation is the energy that could have been produced under reference conditions considering only limitations within control of plant management (i.e., plant equipment and personnel performance, and work control).

Reference energy generation is the energy that could be produced if the unit operated continuously at full power under reference ambient conditions throughout the period. Reference ambient conditions are environmental conditions representative of the annual mean (or typical) ambient conditions for the unit.

Performance criterion: Projected or actual performance falls below year-end goal. This criterion will apply to Zion and LaSalle following restart of their units.

5. Unplanned Capability Loss Factor

The ratio of the unplanned energy losses during a given period of time to the reference energy generation, expressed as a percentage.

Unplanned energy loss is energy that was not produced during the period because of unplanned shutdowns, outage extensions, or unplanned load reductions due to causes under plant management control. Causes of energy losses are considered to be unplanned if they are not scheduled at least four weeks in advance.

Reference energy generation is the energy that could be produced if the unit operated continuously at full power under reference ambient conditions throughout the period. Reference ambient conditions are environmental conditions representative of the annual mean (or typical) ambient conditions for the unit.

Performance criterion: Projected or actual results show capability loss will be > 5% above established year-end site target. This criterion will apply to Zion and LaSalle following restart of their units.

6. Safety System Performance

This indicator is calculated separately for each of the following three BWR systems and each of the following three PWR systems:

BWRs

- high pressure injection/heat removal (high pressure coolant injection or high pressure core spray or feedwater coolant injection, and reactor core isolation cooling or isolation condenser systems)
- residual heat removal system
- emergency AC power system

PWRs

- high pressure safety injection system
- auxiliary feedwater system
- emergency AC power system

The sum of the unavailabilities of the components in each safety system listed above divided by the number of trains in the system. The component unavailability is the ratio of the hours the component was unavailable to the hours the system was required to be available for service. For the emergency AC power system, the indicator is defined as the sum of the emergency generator (diesel or gas turbine) unavailabilities divided by the number of emergency generators at a station. For the emergency AC power system, the indicator is displayed for all stations. For the other safety systems, the indicator applies to either BWRs or PWRs and is displayed separately.

Performance criterion: Unavailability exceeds two times the industry goal for any system.

7. Industrial Safety Accident Rate

The number of accidents for all utility personnel permanently assigned to the station resulting in one or more days away from work (excluding the day of the accident), or one or more days of restricted work (excluding the day of the accident), or work-related fatalities, per 200,000 man-hours worked. Contractor personnel are not included in this indicator.

Performance criterion: ISAR exceeds the established site target.

B. COMMONWEALTH EDISON SPECIFIC INDICATORS

The following eighteen Commonwealth Edison specific indicators were selected based upon review of indicators that ComEd has used in the past, review of indicators used by other nuclear utilities, and the experience of our management team, many of whom have used these indicators in other nuclear programs. They will be applied in a consistent manner across our stations and cover the important operating, maintenance, engineering, and corrective action areas that must perform well for sustained improvement at each site. They are designed to provide a level of sensitivity and detail so that timely corrective action can be taken when performance trends surface, permitting us to resume tracking toward our overall goal of superior performance.

OPERATIONS

8. Operator Workarounds

An equipment or program deficiency which requires that an Operator take non-standard action to comply with procedures, design requirements, or Technical Specifications.
(# opened during the month) (# closed during the month) (total # at end of month)

Performance criterion: Greater than a 10% deviation from the site workdown curve.

9. Out of Service Errors

The total number OOS error PIFs that are designated as significant (Level 1, 2, or 3 PIFs or SCAQ in the new CAP process). (total # during the month)

Performance criterion: Greater than one error per month.

10. Human Performance Error Licensee Event Reports (LERs)

Errors of omission or commission by any individual during plant activities leading to submission of an LER. Count all LERs that are designated as having the cause being personnel error and LERs with a primary cause code of A. Count the LERs submitted during the month. (# during the month)

Performance criterion: Greater than or equal to two per month per site.

11. Temporary Plant Alterations

The total number of temporary alterations. Temporary alterations are non-permanent changes, modifications, or adjustments to the approved design configuration of a structure, system, or component. (# opened during the month) (# closed during the month) (total # at end of month)

Performance criterion: Greater than or equal to 10% deviation between the number opened and closed during a month.

12. Failed Technical Specification Pump and Valve Surveillances

The number of Technical Specification, pump and valve surveillances, including IST, which do not meet the Technical Specification or IST required acceptance criteria for pumps and valves per month. Does not include Administrative Technical Specification requirements. (# of failed pumps and valves during the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

13. Unplanned Entries into LCOs

The number of times that the unit was in a 7 day or less required shutdown LCO that was not previously planned. (# during the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

14. Percent Contaminated Floor Space

All areas of the plant that have smearable contamination $\geq 1000\text{dpm}/100\text{cm}^2$. The only areas excluded from this trending are; high radiation areas with infrequent access, areas that are not accessible, vaults, pits, areas routinely used for contaminated work. Areas containing grating and satellite RPAs shall be trended as part of this indicator. (% at the end of the month)

Performance criterion: Greater than 3% total area, as defined, for each site.

MAINTENANCE

15. Non-Outage Corrective Work Requests

The number of corrective maintenance work request tasks, including degraded and action requests, that are non-outage and for power block equipment and structures. Corrective maintenance is the repair and restoration of equipment or components that have failed or are malfunctioning. (# opened during the month) (# closed during the month) (total # at end of month)

Performance criterion: Greater than or equal to 10% deviation from established workdown curve.

16. Percent Rework

The performance of any physical maintenance task which results in a loss of time or money. During analysis of the component history in which any maintenance (like in kind) is identified within 12 months after maintenance has been performed on that component. The total rework per month divided by the total number of all corrective and degraded maintenance completed by maintenance per month excluding surveillances and preventive maintenance. (% for the month)

Performance criterion: Greater than or equal to 4%.

17. Outage Work Requests

The number of work request tasks that require an outage to complete. (# at the end of the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

ENGINEERING

18. Engineering Requests

The total number of open engineering requests that include requests for design changes and support from engineering. (# opened during the month) (# closed during the month) (total # at end of month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

19. Engineering Requests Overdue

The number of overdue engineering requests for design changes and support from engineering. (# during the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

CORRECTIVE ACTIONS

20. Corrective Action Items

Number of corrective actions resulting from NOVs, PIFs, LERs, or CARs per month that have been opened, closed and total remaining open at the end of the month. This includes NTS items with a Doc Type = 100, 180, 181, 200, 230, and 315. (# open during the month) (# closed during the month) (total open at the end of the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

21. Overdue Corrective Action

Number of corrective actions resulting from NOVs, PIFs, LERs, or CARs that went overdue during the month. This includes NTS items with a Doc Type = 100, 180, 181, 200, 230, and 315. (total # during the month)

Performance criterion: Greater than or equal to 15 / quarter.

22. Repeat Events

Monthly, the number of events that occurred during the past month whose root cause investigation report has been completed during the past month, that are reasonably similar in nature, to an event that occurred during the past 24 calendar months with one or more of the same root causes. There is approximately one month lag in reporting this indicator due to the time to complete root cause investigations. (# during the month)

Performance criterion: Greater than or equal to 10% of total investigations indicate repeat events.

23. Number of Problem Identification Forms (PIFs) Written

The number of PIFs written by the site. (# during the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.

OTHER

24. Overtime Hours

The number of overtime hours worked by hourly and salaried personnel through grade 11 by site per month. (total overtime hours at the end of the month)

Performance criterion: Greater than or equal to 10% of planned overtime hours.

25. Cited NRC Violations

The number of cited violations per month. The month in which the inspection report is issued is the month in which the cited violation is counted. (total # during the month)

Performance criterion: Trend for 6 months to establish baseline prior to selecting criterion.