PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 20, 1997

MEMORANDUM TO: Document Control Desk
Document Management Branch
Division of Information Support Services
Office of Information Resources Management

FROM: James W. Shapaker, Technical Assistant
Events Assessment and Generic Communications Branch
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

SUBJECT: DOCUMENTS ASSOCIATED WITH NRC GENERIC LETTER 97-02, REVISED CONTENTS OF THE MONTHLY OPERATING REPORT (TAC No. M91544)

The Events Assessment and Generic Communications Branch (PECB) in the Divisison of Reactor Program Managment (DRPM) prepared the subject generic letter, which was issued on May 15, 1997, and given accession number 9705020260. There is material related to the subject generic letter that should be placed in the NRC Public Document Room and made available to the public. Therefore, by copy of this memorandum, I am providing the following documents to the NRC Public Document Room: (1) a copy of the published version of the subject generic letter, (2) a copy of the information paper (SECY-97-092) that was sent to the Commission, (3) a copy of each letter received in response to the notice of oportunity for public comment on the proposed generic letter that was published in the *Federal Register* on August 18, 1995, (4) a copy of the summary and resolution of public comments that were received, and (5) a copy of the CRGR review package.

I request that you provide me with the Nuclear Documents System accession number for this memorandum. This information may be provided by telephone (415-1151) or by e-mail (JWS). In addition, please modify the appropriate NUDOCS entries to reflect the fact that the documents identified herein are related to Generic Letter 97-02.

Attachments:
As stated

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IDSR-5 Generic Letter

I&E

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

May 15, 1997

NRC GENERIC LETTER 97-02: REVISED CONTENTS OF THE MONTHLY OPERATING REPORT

Addressees

All holders of operating licenses for nuclear power reactors, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

Purpose

The purpose of this generic letter is to inform licensees that the NRC is requesting the submittal of less information in the monthly operating report. This generic letter requires no specific action or written response.

Discussion

OVERVIEW

The assessment of NRC information gathering needs has been the subject of several staff reviews. These reviews have focused on identifying duplicative reporting, determining whether some reports could be reduced in scope or eliminated, and determining whether the frequency of reporting could be reduced. In this regard, the NRC staff concludes that the scope of the information requested in the monthly operating report, which is called for in the Technical Specifications, may be reduced.

NEED FOR THE MONTHLY OPERATING REPORT

The impetus for the monthly operating report came from the 1973-1974 oil embargo. Draft Regulatory Guide 1.16, Revision 4, "Reporting of Operating Information - Appendix A Technical Specifications," published for comment in August 1975, identifies operating statistics and shutdown experience information then desired in the operating report. Licensees have generally followed the guidance of the draft Regulatory Guide. The NRC initially compiled this information on a monthly basis and published it in hard copy form as NUREG-0020, "Licensed Operating Reactors - Status Summary Report" (referred to as the "Gray Book"). Beginning in 1990, this information was published on an annual basis in hard copy form and was also made available on diskette monthly. NUREG-0020 was discontinued after the December 1995 report.

15pp

The NRC staff assessed the information that is submitted in the monthly operating report and determined that it is a unique source of information for two of the eight performance indi- cators approved by the Commission for the NRC Performance Indicator (PI) Program. Performance indicator data are fundamental tools used by the NRC staff to independently analyze nuclear power plant safety performance trends. The performance indicator data provided in the monthly operating report include the **number of reactor critical hours** for the *equipment forced outage* indicator, the **forced outage hours** and **generator on-line hours** for the *forced outage rate* indicator, the **number of forced outages** for the *equipment forced outage* indicator, and the **outage type (whether forced or scheduled)** for the *forced outage rate* and *equipment forced outage* indicators. NRC will retain the monthly operating report because the agency has a continuing need to receive this performance indicator data, and at the same frequency. Attachment 1 to this generic letter delineates the information that is needed for the PI Program.

The NRC also has a need to provide operating factor (**availability and capacity factors**) data to Congress and other government agencies on a regular basis. This information is useful as an indicator of the ability of a plant to perform its design function, and provides insights into the safety performance of a plant. In general, a plant with high **availability and capacity factors** is less likely to experience transients which challenge safety systems. These data are often used by senior NRC managers in meetings and presentations. The monthly operating report is a unique source of reliable and timely operating factor data for all commercial nuclear power plants to support the information needs of senior NRC managers. Attachment 1 also delineates the operating factor data that is needed.

Voluntary Response Requested

Effective immediately, licensees of operating nuclear power plants submitting monthly operating reports called for in the Technical Specifications may do so in accordance with the guidance provided in Attachment 1 to this generic letter. Implementation of this option by licensees is voluntary. However, licensees will have to take whatever means are appropriate to negate any prior commitments or requirements to provide monthly operating reports which contain the information identified in Draft Regulatory Guide 1.16, Revision 4, Section C.1.c; this may include an amendment to the facility operating license to remove a license condition. Licensees who choose not to implement this option may continue to submit monthly operating reports as they have in the past.

Backfit Discussion

The NRC staff has determined that the backfit rule, Section 50.109 of Title 10 of the *Code of Federal Regulations* (10 CFR 50.109), does not apply to this generic letter because the reduction by licensees of the scope of the monthly operating report to that described in Attachment 1 is strictly voluntary.

Federal Register Notification

A notice of opportunity for public comment was published in the *Federal Register* (60 FR 43174) on August 18, 1995. Comments were received from 6 utilities, 2 private industries, 1 university, 1 industry organization, 1 government agency, 3 public interest groups, and 2 individuals (no affiliation). Copies of the staff evaluation of these comments are available from the NRC Public Document Room.

Paperwork Reduction Act Statement

This generic letter contains voluntary reductions in the public reporting burden. The resultant information collections are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These information collections were approved by the Office of Management and Budget, approval number 3150-0011, which expires July 31, 1997.

The public reporting burden for this collection of information is estimated to average 10 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The U.S. Nuclear Regulatory Commission is seeking public comment on the potential impact of the collection of information contained in the generic letter and on the following issues:

1. Is the proposed collection of information necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?

2. Is the estimate of burden accurate?

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

4. How can the burden of the collection of information be minimized, including the use of automated collection techniques?

Send comments on any aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch, T-6 F33, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0011), Office of Management and Budget, Washington, DC 20503.

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

If you have any questions about this matter, please contact one of the technical contacts listed below.

signed by

Marylee M. Slosson, Acting Director
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Technical contacts: Marcel R. Harper, AEOD
(301) 415-6344
E-mail: mrh1@nrc.gov

James W. Shapaker, NRR
(301) 415-1151
E-mail: jws@nrc.gov

Attachments:
1. Monthly Operating Report Contents
2. List of Recently Issued NRC Generic Letters

If you have any questions about this matter, please contact one of the technical contacts listed below.

original signed by

Marylee M. Slosson, Acting Director
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

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Attachments:
1. Monthly Operating Report Contents
2. List of Recently Issued NRC Generic Letters

Tech Editor has reviewed and concurred on 03/20/97

DOCUMENT NAME: 97-02.GL *SEE PREVIOUS CONCURRENCES

To receive a copy of this document, indicate in the box: "C" = Copy w/o attachment/enclosure "E" = Copy w/attachment/enclosure "N" = No copy

OFFICE	TECH CONTS		OGC		C:PECB:DRPM		AD:DRPM			
NAME	MRHarper* JWShapaker*		RKHoefling*		AEChaffee*		MMSlosson			
DATE	03/19/97		03/31/97		03/20/97		05/14/97			

OFFICIAL RECORD COPY

MONTHLY OPERATING REPORT CONTENTS

Background

As part of its mission to protect public health and safety, the NRC monitors the performance of licensees that operate the commercial nuclear power plants in the United States. This monitoring effort alerts the NRC to the necessity of adjusting plant-specific regulatory programs. One monitoring tool being used is a set of eight performance indicators (PIs). The PIs provide information about plant performance trends and assist NRC management to identify poor and/or declining safety performance, as well as good and/or improving performance. PI reports are provided to the Commission, NRC senior managers, licensee senior managers, and to the public through the NRC Public Document Rooms. Other tools include availability and capacity factors, which are provided to NRC senior managers, other government agencies, and Congress on a regular basis.

Contents of the Monthly Operating Report

Routine reports of operating statistics and shutdown experience are needed to support the NRC Performance Indicator Program, and availability and capacity statistics. Therefore, the following information should continue to be provided in the monthly operating report:

- Docket Number, Unit Name, Date, Name and Telephone Number of Preparer, and Reporting Month

  This information is needed for administrative, tracking, and data entry purposes for the PI Program.

- Unit Shutdowns, including:
  - Sequential number of shutdown for calendar year
  - Date of start of shutdown
  - Type (Forced or Scheduled)
  - Duration (hours) - to the nearest tenth of an hour
  - Reason for shutdown
  - Method of shutting down the reactor
  - Corrective actions/comments
  - Narrative summary of monthly operating experience

  This information is needed to calculate the following performance indicators in the PI report: *forced outage rate* and *equipment-forced outages per 1000 commercial critical hours*. The information is also used to confirm the operational phase of each event. The operational phase is identified in the PI report for various initiators: automatic trip while critical, safety system actuation, significant event, safety system failure, and cause codes.

- Number of Hours the Reactor Was Critical

  This information is needed to calculate the *equipment forced outage* indicator and to tabulate critical hours in the PI report.

- Number of Hours the Generator Was On Line (Service Hours)

  This information is needed to calculate the *forced outage rate* indicator in the PI report.

- Unit Reserve Shutdown Hours

  This information is needed to calculate the unit **availability factor**.

- Design Electrical Rating

- Maximum Dependable Capacity

- Net Electrical Energy

  This information is needed to calculate the unit **capacity factor**.

Appendices A and B of this attachment provide further guidance concerning the information that should continue to be submitted. Appendices A and B may also be used as a guide for the format of the information submitted in the monthly operating report. The completed monthly operating report should be submitted by the 15th of the month following the calendar month covered by the report to Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.

APPENDIX A
OPERATING DATA REPORT

DOCKET NO. _____
UNIT NAME _____
DATE _____
COMPLETED BY _____
TELEPHONE _____

(This report should continue to be furnished on a monthly basis by licensees.)

REPORTING PERIOD _____
(Month/Year)

	MONTH	YEAR TO DATE	CUMULATIVE

1. Design Electrical Rating (MWe-Net). The nominal net electrical output of the unit specified by the utility and used for the purpose of plant design.

2. Maximum Dependable Capacity (MWe-Net). The gross electrical output as measured at the output terminals of the turbine-generator during the most restrictive seasonal conditions minus the normal station service loads.

3. Number of Hours the Reactor Was Critical. The total number of hours during the gross hours of the reporting period that the reactor was critical.

4. Number of Hours the Generator Was On Line. (Also called Service Hours). The total number of hours during the gross hours of the reporting period that the unit operated with breakers closed to the station bus. The sum of the hours the generator was on line plus the total outage hours should equal the gross hours in the reporting period.

APPENDIX A
OPERATING DATA REPORT

DOCKET NO. _____
UNIT NAME _____
DATE _____
COMPLETED BY _____
TELEPHONE _____

(This report should continue to be furnished on a monthly basis by licensees.)

REPORTING PERIOD _____
(Month/Year)

	MONTH	YEAR TO DATE	CUMULATIVE
5. Unit Reserve Shutdown Hours. The total number of hours during the gross hours of the reporting period that the unit was removed from service for economic or similar reasons but was available for operation.			
6. Net Electrical Energy (MWH). The gross electrical output of the unit measured at the output terminals of the turbine-generator minus the normal station service loads during the gross hours of the reporting period, expressed in mega-watt hours. Negative quantities should not be used.			

APPENDIX B

UNIT SHUTDOWNS

DOCKET NO. _____
UNIT NAME _____
DATE _____
COMPLETED BY _____
TELEPHONE _____

REPORTING PERIOD: _____
(Month/Year)

NO.	DATE	TYPE F: FORCED S: SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN (2)	CAUSE/CORRECTIVE ACTIONS COMMENTS

SUMMARY:

(1) Reason

A - Equipment Failure (Explain)
B - Maintenance or Test
C - Refueling
D - Regulatory Restriction
E - Operator Training/License Examination
F - Administrative
G - Operational Error (Explain)
H - Other (Explain)

(2) Method

1 - Manual
2 - Manual Trip/Scram
3 - Automatic Trip/Scram
4 - Continuation
5 - Other (Explain)

UNIT SHUTDOWNS

INSTRUCTIONS

All plant shutdowns that have occurred during the report period should be identified. The COMMENTS column should be used to provide additional information when the coded columns are not sufficiently descriptive. Please do not add to the list of codes or legends now furnished. Similarly, do not add additional columns.

NUMBER - This column should indicate the sequential number assigned to each shutdown for the calendar year. When a shutdown begins in one report period and ends in another, an entry should be made for both report periods to ensure that all shutdowns are reported. Until a unit has achieved its first power generation, no number should be assigned to each entry.

DATE - This column should indicate the date of the start of each shutdown, in the following numerical format: YYMMDD, where YY is the year, MM is the month and DD is the day. When a shutdown begins in one report period and ends in another, an entry should be made for both report periods to ensure that all shutdowns are reported.

TYPE - Use "F" or "S" in this column to indicate either a "**F**orced" or "**S**cheduled" shutdown, respectively, for each shutdown. Forced shutdowns include those required to be initiated by no later than the weekend following the discovery of an off-normal condition. It is recognized that some judgment is required in categorizing shutdowns in this way. In general, a forced shutdown is one that would not have been completed in the absence of the condition for which corrective action was taken.

DURATION (Hours) - Self explanatory. When a shutdown extends beyond the end of a report period, count only the time to the end of the report period and pick up the ensuing downtime in the following report period. Report duration of outages rounded to the nearest tenth of an hour to facilitate summation. The sum of the total outage hours plus the hours the generator was on line should equal the gross hours in the reporting period.

REASON - Categorize by letter designation from the table appearing on the report form. If category H (Other) must be used, provide brief, supplementary comments.

METHOD OF SHUTTING DOWN THE REACTOR - Categorize by number designation from the table appearing on the report form. If Category 5 (Other) must be used, provide brief, supplementary comments.

CAUSE/CORRECTIVE ACTIONS/COMMENTS - Use this column to amplify or explain the reasons for each shutdown, with the corrective action taken, if appropriate. The Comments column entries should provide identification of each shutdown that occurs as a direct result of an event for which a licensee event report has been or will be submitted. (This information may not be immediately evident for all such shutdowns, of course, since further investigation may be required to ascertain whether or not a licensee event report was involved.) When a direct correlation can be made between a given shutdown and a specific licensee event report, the Comments column entry should state the licensee event report number and date.

SUMMARY: - Write a brief summary description (3 to 4 sentences) of the highlights of operation of the unit for the reporting month.

LIST OF RECENTLY ISSUED GENERIC LETTERS

Generic Letter	Subject	Date of Issuance	Issued To
97-01	DEGRADATION OF CONTROL ROD DRIVE MECHANISM NOZZLE AND OTHER VESSEL CLOSURE HEAD PENETRATIONS	04/01/97	ALL HOLDERS OF OLs FOR PRESSURIZED WATER REACTORS, EXCEPT THOSE WHO HAVE PERMANENTLY CEASED OPERATIONS AND HAVE CERTIFIED THAT FUEL HAS BEEN PERMANENTLY REMOVED FROM THE REACTOR VESSEL
95-06, SUPP. 1	CHANGES IN THE OPERATOR LICENSING PROGRAM	02/31/97	ALL HOLDERS OF OLs (EXCEPT THOSE LICENSEES OF PERMANENTLY SHUTDOWN REACTORS WHO ARE NO LONGER REQUIRED TO UTILIZE LICENSED REACTOR OPERATORS) FOR NPRs
96-07	INTERIM GUIDANCE ON TRANSPORTATION OF STEAM GENERATORS	12/05/96	ALL HOLDERS OF OLs AND DECOMMISSIONING FACILITIES WITH POSSESSION-ONLY LICENSES FOR PRESSURIZED-WATER NPRs
96-06	ASSURANCE OF EQUIPMENT OPERABILITY AND CONTAINMENT INTEGRITY DURING DESIGN-BASIS ACCIDENT CONDITIONS	11/13/96	ALL HOLDERS OF OLs FOR NPRs, EXCEPT FOR THOSE LICENSES THAT HAVE BEEN AMENDED TO POSSESSION-ONLY STATUS

OL = OPERATING LICENSE

CP = CONSTRUCTION PERMIT
NPR = NUCLEAR POWER REACTORS

POLICY ISSUE
(Information)

April 29, 1997 SECY-97-092

FOR: The Commissioners

FROM: L. Joseph Callan
Executive Director for Operations

SUBJECT: PROPOSED NRC GENERIC LETTER TITLED "REVISED CONTENTS OF THE MONTHLY OPERATING REPORT"

PURPOSE:

To inform the Commission, in accordance with the guidance in the December 20, 1991, memorandum from Samuel J. Chilk to James M. Taylor regarding SECY-91-172, "Regulatory Impact Survey Report-Final," of the staff's intent to issue the attached generic letter (Attachment 1). The generic letter notifies addressees that the NRC is requesting the submittal of less information in a modified version of the monthly operating report, and provides for voluntary conformance on the part of addressees.

DISCUSSION:

The assessment of NRC information-gathering needs has been the subject of several staff reviews. These reviews have focused on identifying duplicative reporting, determining whether some reports could be reduced in scope or eliminated, and determining whether the frequency of reporting could be reduced. In this regard, the NRC staff concluded that the scope of the information requested in the monthly operating report, which is required in Technical Specifications, could be reduced.

NRC initiated the monthly operating report in response to the 1973-1974 oil embargo. Draft Regulatory Guide 1.16, Revision 4, "Reporting of Operating Information - Appendix A, Technical Specifications," published for comment in August 1975, identifies operating statistics and shutdown experience information then desired in the operating report. The NRC initially compiled this information and published it monthly in hard copy form. Although NRC

Contact:

James W. Shapaker, NRR
(301) 415-1151

Marcel R. Harper, AEOD
(301) 415-6344

SECY NOTE TO BE MADE PUBLICLY AVAILABLE IN 5 WORKING DAYS FROM THE DATE OF THIS PAPER.

continued to compile this information monthly, beginning in 1990, the agency published it in hard copy form annually and made the data available on diskette monthly. NRC stopped publishing the information in hard copy form after the December 1995 report.

The NRC staff determined that the information submitted in the monthly operating report is a unique source of data for two of the eight performance indicators approved by the Commission for the NRC Performance Indicator (PI) Program. Performance indicator data are fundamental tools used by the NRC staff to independently analyze trends in nuclear power plant safety performance. NRC will retain the monthly operating report because the agency has a continuing need to receive these performance indicator data, and at the same frequency. Attachment 1 to the generic letter delineates the information that is needed for the PI Program.

The NRC also needs to provide data on operating factors to Congress and other government agencies on a regular basis. This information serves as an indicator of the ability of a plant to perform its design function, and provides insights into a plant's safety performance. In addition, senior NRC managers frequently use operating factor data in meetings and presentations. The monthly operating report is a unique source of reliable and timely operating factor data for all commercial nuclear power plants to support the information needs of senior NRC managers. Attachment 1 to the generic letter delineates the operating factor data that are needed.

A notice of opportunity for public comment was published in the *Federal Register* on August 18, 1995. Comments were received from 6 utilities, 2 private industries, 1 university, 1 industry organization, 1 government agency, 3 public interest groups, and 2 individuals (no affiliation). Based on the comments received, it appears that licensees will stand to benefit from the proposed generic letter by not having to devote as many resources to the preparation of the monthly operating report. Nevertheless, the information that the public may need to monitor operational safety at nuclear power plants will still be provided. In this regard, many commenters recommended that availability and capacity factor data should continue to be reported in the monthly operating report since, over the years, a correlation between safety and productive efficiency has been observed. Consequently, availability and capacity factor data will continue to be called for. It is noted that the information on power reductions that is to be deleted from the monthly operating report is not useful to the public for assessing operational safety since, by the time this information appears in the report, the event will have passed and already been assessed for potential safety significance by the licensee and NRC. However, any power reduction initiated because a shutdown is required by a plant's technical specifications, even if the shutdown is not completed, is reportable within one hour under 10 CFR 50.72, and this information is also made publicly available.

Some commenters questioned the need for the present frequency of the report. Although the Performance Indicator (PI) Report, which the monthly operating report will primarily support, will be published annually (this began with the

Fiscal Year 1996 report), the Commission has directed the staff to collect PI data on a continuing basis. This is because PI data is also needed to support semiannual Senior Management Meetings, program office and agency annual reports, and special requests by the Commission for current PI information. Therefore, the information will continue to be collected on a monthly basis. The suggestion was also made that NRC consider collecting the data electronically; this aspect is currently being assessed by the agency.

The staff believes that the monthly operating report as currently constituted in Attachment 1 provides an acceptable balance between (1) satisfying the information needs of the agency, the Congress, other government agencies, and the public, and (2) accommodating those commenters that felt reduced reporting would be better. Attachment 2 lists the data that will no longer be requested. Copies of the comment letters that were received are available in the Public Document Room (PDR). A copy of the staff's evaluation of the comments is available in the NRC Central Files and will be made available in the PDR after the generic letter is issued.

The proposed generic letter was endorsed by the Committee to Review Generic Requirements (CRGR) on March 18, 1997.

The Office of the General Counsel (OGC) has reviewed the proposed generic letter and has no legal objection to it. Furthermore, the Office of Management and Budget (OMB) has confirmed that the proposed generic letter is not a major "rule" under the provisions of the Small Business Regulatory Enforcement Fairness Act (see 5 U.S.C., Chapter 8), enacted on March 29, 1996.

The Chief Information Officer has no objection to the issuance of the proposed generic letter.

The staff intends to issue this generic letter approximately 5 working days after the date of this information paper.

L. Joseph Callan
Executive Director
for Operations

Attachments:
1. Proposed Generic Letter Titled "Revised Contents of the Monthly Operating Report"
2. Monthly Operating Report Data Being Deleted

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PUBLIC COMMENT LETTERS

ATTACHMENT 10

DS09
J. Shapaker

GREENPEACE

60FR43174
8/18/95
(1)

September 4, 1995

Chief
Rules Review and Directives Branch
US Nuclear Regulatory Commission
11545 Rockville Pike
Rockville, MD 20555

To Whom it Concerns:

This is a comment on the proposed change in reporting requirements for nuclear utilities.

We strongly disagree that the reporting of such data as availability and capacity factor have no bearing on nuclear plant safety. While at any given moment this may be true, this data is a strong indicator over time of the level of safe operation of a nuclear facility. If reporting of this data were eliminated, the public would be deprived of data which does indeed give indication of safety of operation.

Thus, we do not agree with the elimination of reporting of the monthly data as is being considered by the NRC. We therefore request that you do not eliminate this requirement.

Sincerely,

Tom Clements

Tom Clements
Greenpeace
Nuclear Campaign

1436 U Street, NW • Washington, DC 20009 • Tel (202) 462-1[illegible] • Fax (202) 462-4507 • Tlx 89-2359

Argentina • Australia • Austria • Belgium • Brazil • Canada • Chile • Czech Republic • [illegible]ark • Finland • France • Germany • Greece • Guatemala • Ireland • Italy
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CENTER FOR
ECONOMIC POLICY
RESEARCH

STANFORD
UNIVERSITY

September 11, 1995

Chief, Rules Review and Directives Branch
Nuclear Regulatory Commission
Washington, DC 20555

Dear Chief of Rules Review and Directives Branch,

In response to your Press Release of August 29, 1995, "NRC Staff Asks Public Comment on Proposal to Reduce Amount of Operational Data Reported by Nuclear Power Plant Licensees," I strongly urge you to reconsider the reduction in the collection and publication of nuclear power plant operations data, so-called "Graybook" data. During the last ten years, I have relied extensively on these data. Attached is a partial list of my papers that have analyzed these data.

I realize that some of these data do not appear to be directly related to the NRC's safety mission. However, as nuclear power plants age and as these plants face increased competition from other sources of power, the operations data point toward possible safety problems.

For example, I have decomposed the capacity factor into the service factor and the capacity utilization rate. See my paper attached, "Utilization and Service: Decomposing Nuclear Reactor Capacity Factors," *Resources and Energy* (1990). The service factor is the percentage time that the plant is up and running. The capacity utilization rate is the plant's capacity factor when it is up and running. As I show (see page 227), aging in plants of different vendors effects the capacity utilization rate and the service factor differently. Changes in the underlying operations data point to aging effects.

Also, the Graybook data allow for the analysis of duration between shutdowns of all lengths. I have shown that there is a relationship between plant organizational structure and the probability of shutting down and the probability of coming back up after a shutdown. See "Organization Structure and Expected Output at Nuclear Power Plants," forthcoming in *Review of Economics and Statistics*.

I believe that the NRC can understand aging effects from these operational data. As the nuclear power plant fleet ages, a consistent set of these data will become increasingly important.

I would be happy to talk with you about my work. I would be willing to work with the NRC to provide these data to the public at lower cost. Please let me know if I can help you further in any way.

Sincerely yours,

Geoffrey Rothwell, Ph.D.
(415) 725-3456
Enclosures

9509180150

Corner of Galvez & Serra, Stanford, California 94305-6015 Fax (415) 723-8611 Telephone (415) 725-1874

Dr. Geoffrey Rothwell
Senior Research Associate
Center for Economic Policy Research
Stanford University
Stanford, California 94305
(415) 725-3456

Publications using the Graybook Data:

"A Dynamic Programming Model of Nuclear Power Plant Fuel Cycles," with John Rust, *Journal of Business and Economic Statistics* (forthcoming).

"Organizational Structure and Expected Output for Nuclear Power Plants," *Review of Economics and Statistics* (forthcoming).

"Measuring Standardization: An Application to the American and French Nuclear Power Industries" with Paul David, *European Journal of Political Economy* (forthcoming).

"Comparing Boiling and Pressurized Water Reactor Productivity in the United States: 1975-1990," in J. Szargut, et al, eds, *Energy Systems and Ecology: Proceedings of an International Conference.* (Krakov, Poland: American Society of Mechanical Engineers, July 5-9, 1993). Also available as Center for Economic Policy Research Working Paper No. 333.

"Performance and Reliability at U.S. Nuclear Power Plants," *Public Utilities Fortnightly* (July 1, 1993).

"Utilization and Service: Decomposing Nuclear Reactor Capacity Factors," *Resources and Energy* 12 (1990) pp. 215-229.

"Risk and Reactor Safety Systems Adoption" with Jeffrey Dubin, *Journal of Econometrics*, 42, 2 (October 1989) pp. 201-218.

"Stock Market Reaction to Nuclear Reactor Failures," *Contemporary Policy Issues* (July 1989) pp. 96-106.

"Stop and Start: A Duration Analysis of Nuclear Reactor Operations," *Proceedings of the International Association of Energy Economists' Annual North American Conference* (October 1989) pp. 309-17.

Working Papers using the Graybook data:

"Learning by Accident?: Reductions in the Risk of Unplanned Outages in U.S. Nuclear Power Plants After Three Mile Island," with Paul David and Roland Maude-Griffin, revision of CEPR Working Paper No. 248 (September 1994).

"Contracting Out for Services: An Empirical Examination of Practices at Nuclear Power Plants," with J. Bradford Jensen, Center for Economic Policy Research Working Paper 289 (May 1992).

Contact me at the above address for any or all of these papers.

Resources and Energy 12 (1990) 215–229. North-Holland

UTILIZATION AND SERVICE

Decomposing Nuclear Reactor Capacity Factors*

Geoffrey ROTHWELL

Stanford University, Stanford, CA 94305-6072, USA

Received May 1989, final version received February 1990

Statistical analyses of electricity generation productivity have focused on the capacity factor, i.e., the ratio of realized to potential output. Here, the capacity factor is decomposed into the capacity utilization rate (output when the reactor is operating) and the service factor (the percent of operating time). Elasticities of capacity factor, utilization rate, service factor, and the forced outage rate with respect to reactor size and age are estimated for fuel cycles of four reactor manufacturers, controlling for changes in the industry after the accident at Three Mile Island in 1979. While the service factor decreases with size for all reactor makes, the increase in the capacity utilization rate yields a positive relationship between size and the capacity factor for boiling water reactors. Age has no consistent influence. Only Babcock & Wilcox (the manufacturer of TMI) reactors experienced a significant decrease in productivity after 1979.

1. Introduction

The most popular measure of productivity in the electric utility industry is the capacity factor (i.e., the ratio of net annual electric megawatthours generated and the net annual generator rating times the number of hours). Capacity factors for commercial nuclear power reactors were initially projected at 75–80%, similar to coal-fired power plants. Unfortunately, reactors experienced an average 63% capacity factor from 1975–85. This can be decomposed into a 90% capacity utilization rate (i.e., the capacity factor given that the plant is operating) and a 70% service factor (i.e., the ratio of operating time to total time). Further, the capacity utilization rate can be decomposed into average output per unit of capacity and the number of hours operating. The service factor can be decomposed into the scheduled operating time and the forced outage rate. This paper explores the relation-

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ships among these measures of productivity and the independent variables of interest in previous studies.

2. Nuclear reactor performance

The analysis of reactor performance has taken three directions: (1) engineering case studies of individual plants addressing specific operating problems, (2) descriptive statistics for various samples of total performance measures, such as the capacity factor, and (3) regression estimation of equations relating capacity factors to plant characteristics. The engineering studies provide a rich understanding of the technical aspects of reactor operation, but do not address industry performance. (See publications by the Nuclear Reactor Division of the Electric Power Research Institute.) Descriptive statistics allow a broader view by giving industry-wide averages for many categories, e.g., by vendor, by age, by year, by size, or by country. But these comparisons rarely discuss the interactions between these characteristics. Sophisticated analyses of this type are available in Stoller Corporation (1986).

The regression literature is represented by Komanoff (1978), Joskow and Rozanski (1979), Easterling (1982), and Krautmann and Solow (1988). Table 1 compares these studies. I focus on Joskow and Rozanski (1979) because their results are similar to the other studies, but their model is more general. Joskow and Rozanski find that (1) larger plants have lower asymptotic capacity factors; (2) later plants have higher capacity factors than earlier plants: 'an additional year of design and construction experience increases the asymptotic capacity factor by about 3 percentage points' (p. 165); and (3) learning-by-doing effects are significant and substantial with the reactor operating at 90% of its asymptotic output after three years.

Although Joskow and Rozanski advanced both the analysis of capacity factors and learning, their [illegible]rical measure of learning is equal to 'lifetime cumulative plant output, [illegible]ed by gross plant capacity', i.e., it is the lifetime sum of the capacity factors. The observed capacity factor will be correlated with the cumulative capacity factor, and both will be correlated with the error term in the regression. Hence, their estimates may be biased by simultaneity.

Also, their dependent variable depends on an arbitrarily selected time period, i.e., a calendar year (December 1975 to November 1976). This is particularly troublesome in cross-section samples under the assumption that a reactor must refuel during a one-year period. But reactors need not operate on twelve-month cycles. For example, because of uranium-fuel dynamics, the first and second fuel cycles will be longer than all others. [See Stoller Corporation (1987) on the changing length of reactor fuel cycles.] Because they will not be down for refueling, capacity factors for plants in their first

Table 1

Studies of nuclear reactor performance.[a]

Study	Dependent variable	Constant	Size	Time	Lagged	Type	1st year	R^2
Komanoff (1978)	*CF(PWR)* thru 1977	67.2[c]	*CAP*/100 −3.0[c]	*LAGE* 24.9[c]			*NEWPWR* 8.49[c]	0.25
Komanoff (1978)	*CF(BWR)* thru 1977	72.2[c]	*CAP*/100 −3.0[c]					NA
Joskow Rozanski (1979)	ln *CF* 12/75–11/76	1.3[c]	ln *CAP* −0.3[c]	*V* 0.004[c]	1/*X* −7966[c]	*PWR/X* 1745[c]	*NEWPWR* 3879[c]	0.70
Easterling (1982)	ln *CF(PWR)* thru 1979	75.7(NA)	*CAP*/100 −3.5[c]	*YEARS* 3.4[c]			Delete obs.	NA
Easterling (1982)	ln *CF(BWR)* thru 1979	41.3(NA)	*CAP*/100 −0.9	*YEARS* 7.1[c]			Delete obs.	NA
Krautmann and Solow (1988)	Logit *CF* 1976–1978	−1.0	*CAP* −0.001[c]	*AGE* 0.012[c]	*CFLAG* 1.3[c]	*BWR* −0.2[c]	Delete obs.	NA

[a]Description of variables:
AGE – months since first commercial operation; *BWR* – binary variable indicating Boiling Water Reactor; *CAP* – gross plant capacity in Mw(e); *CF* – capacity factor; *CFLAG* – capacity factor lagged 1 year; *LAGE* – logarithm (base 10) of age in year of observation; Logit CF – logistic transformation of capacity factor; *NEWPWR* – binary variable for PWR with recent commercial operation; *PWR* – binary variable indicating Pressurized Water Reactor; *V* – vintage, number of months since November 1962; *X* – cumulative output divided by gross plant capacity; *YEARS* – discrete number of years of operation to date of observation; NA – not available.
[b]Confidence at 90% level.
[c]Confidence at 95% level.

fuel cycle during the sample period will be higher. This is probably why Joskow and Rozanski find that reactors that began commercial operation after April 1, 1975, had higher capacity factors, not necessarily because these reactors were better performers. I avoid many of these problems by using the length of the fuel cycle, i.e., the period between reactor starts after refueling. To examine the capacity factor in more detail, the next section proposes a method to analyze nuclear reactor performance over the fuel cycle.

3. A decomposition of the capacity factor

The future of the commercial nuclear power industry depends critically on the performance of reactors now in operation. Realized capacity factors have been far less than envisioned by electric utilities when they placed orders in the late 1960s and early 1970s. To examine reactor productivity, I decompose the capacity factor, enabling the calculation of performance elasticities.[1]

The unit 'capacity factor', CF, is equal to the megawatthours of electricity, Q, divided by the product of the potential capacity of the reactor, SZ, and the number of hours in the period of observation, T, i.e.,

$$CF \equiv Q/SZ \cdot T. \tag{1a}$$

This expression can be modified to introduce the amount of time during which the reactor is generating electricity, i.e., 'hours generator on-line,' UP:

$$CF \equiv (Q/SZ \cdot UP) \cdot (UP/T). \tag{1b}$$

Let $Q/(SZ \cdot UP)$ be the capacity utilization rate, CU, and (UP/T) be the unit 'service factor', SF, i.e., CU is a measure of how close the reactor is to potential output when it is running and SF is the percentage of the time the reactor is running. The capacity utilization rate can be decomposed into $1/UP$ and Q/SZ, average output or 'equivalent full power hours' from Stoller (1987).

Further, T is equal to UP plus two types of downtime: scheduled outage time, RM (refueling and maintenance), plus forced outage time, $FORCED$. Then, $T \equiv UP + RM + FORCED$, or

$$\begin{aligned} UP &\equiv T - RM - FORCED \\ &\equiv (T - RM) \cdot (1 - FORCED/(T - RM)) \equiv (T - RM) \cdot (1 - FOR), \end{aligned} \tag{2a}$$

[1] For the definition of the capacity factor and other definitions (in quotes) given here, see the Glossary of the Nuclear Regulatory Commission's *Licensed Operating Reactors*. This publication is discussed more fully in section 3.

where $[FORCED/(T-RM)]$ is the unit 'forced outage rate,' FOR,[2] $(T-RM)$ is the scheduled generation time, and $[(T-RM)/T]$ is the percent of scheduled generation time.

The forced outage rate can be decomposed as

$$FOR \equiv \frac{FORCED}{T-RM} \equiv \frac{S}{T-RM} \cdot \frac{FORCED}{S}, \tag{2b}$$

where S is the number of 'scrams'.[3] Let $SCRAMS=[S/[T-RM)]$, i.e., the average number of scrams during the scheduled generation period, and $SCRAMT=(FORCED/S)$, i.e., the average time spent in each forced outage.

To summarize,

$$CF \equiv CU \cdot SF \equiv \frac{Q}{SZ} \cdot \frac{1}{UP} \cdot \frac{(T-RM)}{T} \cdot (1-FOR), \tag{3}$$

where

$$FOR \equiv SCRAMS \cdot SCRAMT. \tag{4}$$

By taking the natural logarithm of both sides of eqs. (3) and (4):

$$\ln CF \equiv \ln CU + \ln SF \equiv \ln(Q/SZ) - \ln UP + \ln(T-RM/T) + \ln(1-FOR), \tag{5a}$$

$$\ln FOR \equiv \ln SCRAMS + \ln SCRAMT. \tag{5b}$$

The capacity factor can be modeled as a function of those variables found significant in earlier studies, while controlling for changes in the operating environment following the accident at Three Mile Island. CF is a logarithmic function of the size of the generator, SZ, its age, AGE, and whether the observation period was after March 28, 1979, $TMI=1$:

$$\ln CF = a_{01} + a_{11} \ln SZ + a_{21} \ln AGE + a_{31} \ln TMI + e_1, \tag{6}$$

where e_1 is a normally distributed error term. To control for differences

[2] I am using regulatory conventions in defining FOR. A more appropriate probabilistic definition of FOR would focus on the number of outages, i.e., how many outages per unit of time. For an analysis of this probability, see Rothwell (1989b).

[3] A scram is 'a manual or automatic actuation of the reactor protection system resulting in the most rapid possible insertion of the control rods', Nuclear Energy Agency (1987, p. 4).

between reactor manufacturers, i.e., Babcock & Wilcox, Combustion Engineering, General Electric (GE), and Westinghouse, I divide the observations into four samples. (Note Babcock & Wilcox, Combustion Engineering, and Westinghouse produce pressurized water reactors, PWRs, and GE produces boiling water reactors, BWRs.) Similarly, CU, SF, Q/SZ, UP, $(T-RM)/T$, $(1-FOR)$, FOR, $SCRAMS$, and $SCRAMT$ can be represented with logarithmic functions of SZ, AGE, and TMI:

$$\begin{bmatrix} \ln CF \\ \ln CU \\ \ln SF \\ \ln Q/SZ \\ \ln UP \\ \ln T-RM/T \\ \ln 1-FOR \\ \ln FOR \\ \ln SCRAMS \\ \ln SCRAMT \end{bmatrix} = \begin{bmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 \\ y_5 \\ y_6 \\ y_7 \\ y_8 \\ y_9 \\ y_{10} \end{bmatrix} = a_{0j} + a_{1j} \cdot \ln SZ + a_{2j} \cdot \ln AGE + a_{3j} \cdot TMI + e_j, \tag{7}$$

where the a_{ij} are parameters to be estimated and e_j are error terms, assumed to be independent across observations and normally distributed. Note that

$$a_{i1} = a_{i2} + a_{i3} = a_{i4} + a_{i5} + a_{i6} + a_{i7} \text{ and } a_{i8} = a_{i9} + a_{i10} \quad \text{for} \quad i = 0, 1, 2, 3.$$

Parameters are estimated with observations on commercial nuclear reactor fuel cycles during the late 1970s and early 1980s.

4. Data

The data required to estimate this model is available in the Nuclear Regulatory Commission's *Licensed Operating Reactors - Status Summary Report* (NUREG-0020), commonly known as the 'Graybook', from the color of its early cover. This section describes the 'Graybook' data and how I constructed the sample from them.[4]

The Graybook data contain the following information: (1) the unit name; (2) the outage date; (3) the outage length in hours; (4) whether the outage

[4]For other uses of these data, see Dubin and Rothwell (1989) and Rothwell (1989a). For a more detailed discussion of these data, see Rothwell, Appendix F, in David et al. (1988).

type was forced or scheduled; (5) the reason for the outage; and (6) the method of shutting down. There are eight reasons for outage: (A) equipment failure; (B) maintenance or test; (C) refueling; (D) regulatory restriction; (E) operator training or licensing examination; (F) administrative, including decisions to reduce output because of demand conditions; (G) operator error; and (H) other. There are five methods of shutting down the reactor: (1) manual; (2) manual scram; (3) automatic scram; (4) continuation, implying a continued outage from the previous month; and (9) other, including cases where the reactor is still operating, but the turbine-generator is not functioning.

The length of the fuel cycle, T, is the number of hours between the starts of operation after refueling. The refueling and maintenance period, RM, includes all hours from the start of refueling to operation for more than 24 hours. All outages during the fuel cycle that started with a scram constitute $FORCED$; if there were no scrams during an observation period, $SCRAMS$ was set to $0.001/(T-RM)$ and $SCRAMT$ was set to 0.01. RM includes all scheduled outages. Total output was determined by matching fuel cycles with information in Stoller (1987). The size of the plant is the name plate rating of the generator. Its age is the difference between the date at the start of operating after a refueling and the commercial operation date. To avoid problems with uranium-fuel dynamics, the first two cycles have been deleted. Table 2 presents the means of the dependent variables for each reactor make.

Notice that while all the PWRs experienced capacity factors above 65%, the average capacity factor for BWRs was below 55%. Although all reactors were running about 70% of the fuel cycle, BWRs achieved only 75% of their potential output, compared to 90% for PWRs. Also, while the number of scrams (normalized by the number of hours in a year) were generally the same for all reactors, BWRs were down longer after a scram. Finally, notice that averages for all the independent variables are similar across all reactors.

5. Estimation results

Tables 3.1 through 3.4 present parameter estimates for eq. (7).[5] According

[5]The robustness of these results was tested by the inclusion of interaction and quadratic terms, as well as a series of binary variables. The interaction terms, e.g., $\ln SZ \cdot \ln AGE$, were insignificant individually and as a group. I tested the hypothesis that there was no difference between the partial derivative of each dependent variable with respect to size and age, with and without a series of excluded variables. This series included binary variables representing (1) the manufacturer of the nuclear steam supply system, (2) the architect-engineer who designed the reactor, (3) the general contractor who built the reactor, (4) the manufacturer of the turbine-generator, and (5) the region. I could not reject the null hypothesis for any series. I did find, however, that the inclusion of binary variables representing the electric utility operating the reactor did change coefficients on size, but because so few firms operate reactors of different sizes, the inclusion of these variables confuses the interpretation of the influence of size. For this reason, I did not include firm variables.

Table 2

Means.*

NSSS	Units	All	B&W PWR	COMB PWR	GE BWR	WEST PWR
Obs	*N*	256	30	33	74	119
CF	%	63.0	63.4	67.9	53.7	67.3
CU	%	88.6	92.9	93.9	75.8	92.4
SF	%	71.2	68.0	72.4	69.2	72.8
Q/SZ	Hours	7826	8152	8812	7939	7400
UP	Hours	8969	8785	9394	10324	8055
(T-RM)/T	%	75.6	71.7	75.1	75.0	77.1
(1-FOR)	%	94.1	94.9	96.3	92.3	94.4
T	Hours	13022	13196	13284	15352	11457
RM	Hours	3414	3912	3499	4081	2849
FORCED	Hours	640	498	391	947	553
SCRAMS	N/Year	8.2	8.8	6.3	8.9	8.2
SCRAMT	Hours	64.2	53.7	48.2	81.7	60.4
AGE	Years	6.8	5.6	6.3	6.9	7.2
SIZE	Mw(e)	818	891	789	843	799
TMI	%	74.2	70.0	81.8	74.3	73.1

*B&W - Babcock & Wilcox; COMB - Combustion Engineering; GE - General Electric; WEST - Westinghouse; PWR - Pressurized Water Reactor; BWR - Boiling Water Reactor.

to the earlier studies, decreases in size and increases in age are associated with increases in the capacity factor. Focusing on the first column of each table, these earlier findings are not jointly supported in any sample. Although the coefficient on size is negative for the PWRs, this coefficient is only significant for Westinghouse reactors. The capacity factor for GE reactors increases with size. The coefficient on age is significantly positive for Babcock & Wilcox reactors, significantly negative for Combustion Engineering reactors, and insignificant for both GE and Westinghouse reactors. Statistical analyses of annual capacity factors before 1979 do not explain industry performance after that time.

Can these results be reconciled with the earlier literature by examining the decomposition of the capacity factor? (Note that parameters in columns labeled *CU* and *SF* add to those in the *CF* column and that $CU = Q/SZ - UP$, $SF = (T - RM)/T + (1 - FOR)$, and $FOR = SCRAMS + SCRAMT$). First, consider the influence of size on the capacity utilization rate (*CU*) and the service factor (*SF*). For Westinghouse reactors, the influence of size on *SF* dominates its influence on *CU*. For example, 95% (−0.300/−0.317) of the negative impact of size at these reactors is through *SF*, i.e., larger reactors are running less often than smaller reactors. Although size is not significant in explaining performance for the other PWRs, the same pattern

Table 3.1

Ordinary least squares estimates: Babcock & Wilcox (PWR); $N = 30$.

Model	*CF*	*CU*	*Q/SZ*	*UP*	*SF*	*(T−RM)/T*	*(1−FOR)*	*FOR*	*SCRAMS*	*SCRAMT*
R^2	0.208	0.135	0.604	0.560	0.192	0.148	0.084	0.069	0.176	0.105
C	6.379	0.558	20.653	20.095	5.821	4.933	0.888	−22.130	2.151	−24.281
	(5.110)	(1.271)	(4.666)[b]	(4.976)[b]	(4.420)	(4.451)	(1.264)	(37.334)	(15.532)	(29.688)
ln *SZ*	−1.056	0.102	−1.827	−1.725	−0.954	−0.813	−0.141	2.933	−1.205	4.138
	(0.754)	(0.188)	(0.689)[b]	(0.735)[b]	(0.653)	(0.657)	(0.187)	(5.512)	(2.293)	(4.383)
ln *AGE*	0.271	0.053	0.425	0.371	0.218	0.192	0.026	−1.096	−0.593	−0.503
	(0.118)[b]	(0.029)[a]	(0.108)[b]	(0.115)[b]	(0.102)[b]	(0.103)[a]	(0.029)	(0.863)	(0.359)[a]	(0.686)
TMI	−0.193	−0.044	0.029	0.073	−0.149	−0.116	−0.033	0.840	0.009	0.831
	(0.095)[b]	(0.024)[a]	(0.087)	(0.093)	(0.083)[a]	(0.083)	(0.024)	(0.698)	(0.290)	(0.555)

[a]Confidence at 90% level.
[b]Confidence at 95% level.

Table 3.2

Ordinary least squares estimates: Combustion Engineering (PWR); $N = 33$

Model	*CF*	*CU*	*Q/SZ*	*UP*	*SF*	*(T − RM)/T*	*(1 − FOR)*	*FOR*	*SCRAMS*	*SCRAMT*
R^2	0.113	0.169	0.383	0.286	0.110	0.074	0.175	0.055	0.023	0.181
C	0.184	−0.224	7.414	7.638	0.409	−0.036	0.445	−16.429	−11.530	−4.900
	(0.799)	(0.240)	(0.629)[b]	(0.666)[b]	(0.795)	(0.690)	(0.247)[a]	(9.581)[a]	(8.492)	(4.618)
ln *SZ*	−0.068	0.019	0.209	0.190	−0.087	−0.018	−0.069	1.737	0.693	1.044
	(0.119)	(0.036)	(0.093)[b]	(0.099)[a]	(0.118)	(0.103)	(0.037)[a]	(1.425)	(1.263)	(0.687)
ln *AGE*	−0.127	0.003	0.095	0.093	−0.130	−0.094	−0.036	0.502	−0.339	0.841
	(0.072)[a]	(0.022)	(0.057)[a]	(0.060)	(0.072)[a]	(0.062)	(0.022)	(0.864)	(0.766)	(0.417)[b]
TMI	0.110	0.037	0.130	0.093	0.073	0.031	0.042	−0.341	−0.210	−0.130
	(0.082)	(0.025)	(0.065)[b]	(0.068)	(0.082)	(0.071)	(0.025)[a]	(0.984)	(0.873)	(0.474)

[a]Confidence at 90% level.
[b]Confidence at 95% level.

Table 3.3

Ordinary least squares estimates: General Electric (BWR); $N = 74$.

Model	*CF*	*CU*	*Q/SZ*	*UP*	*SF*	$(T-RM)/T$	$(1-FOR)$	*FOR*	*SCRAMS*	*SCRAMT*
R^2	0.072	0.292	0.280	0.229	0.167	0.148	0.160	0.181	0.173	0.091
C	−2.709 (1.168)[b]	−2.757 (0.754)[b]	5.471 (1.040)[b]	8.228 (0.887)[b]	0.048 (0.751)	0.883 (0.672)	−0.835 (0.423)[b]	0.071 (3.969)	−7.841 (2.435)[b]	7.912 (3.160)[b]
ln *SZ*	0.292 (0.166)[a]	0.363 (0.137)[b]	0.440 (0.148)[b]	0.078 (0.126)	−0.071 (0.107)	−0.158 (0.096)[a]	0.087 (0.060)	−0.277 (0.564)	0.247 (0.346)	−0.524 (0.449)
ln *AGE*	0.017 (0.093)	−0.082 (0.077)	0.230 (0.083)[b]	0.312 (0.071)[b]	0.099 (0.060)	−0.023 (0.054)	0.122 (0.034)[b]	−1.098 (0.317)[b]	−0.617 (0.195)[b]	−0.480 (0.253)[a]
TMI	0.077 (0.091)	0.268 (0.076)[b]	0.121 (0.081)	−0.147 (0.069)[b]	−0.191 (0.059)[b]	−0.111 (0.053)[b]	−0.080 (0.033)[b]	0.968 (0.311)[b]	0.333 (0.191)[a]	0.635 (0.247)[b]

[a]Confidence at 90% level.
[b]Confidence at 95% level.

Table 3.4

Ordinary least squares estimates: Westinghouse (PWR); $N = 119$.

Model	CF	CU	Q/SZ	UP	SF	$(T-RM)/T$	$(1-FOR)$	FOR	$SCRAMS$	$SCRAMT$
R^2	0.168	0.012	0.009	0.014	0.222	0.085	0.209	0.387	0.242	0.178
C	1.746	0.079	9.403	9.324	1.667	0.821	0.846	−34.478	−25.675	−8.802
	(0.583)[b]	(0.336)	(0.606)[b]	(0.587)[b]	(0.467)[b]	(0.427)[a]	(0.233)[b]	(4.744)[b]	(4.739)[b]	(3.013)[b]
ln SZ	−0.317	−0.017	−0.078	−0.061	−0.300	−0.162	−0.138	4.600	2.913	1.687
	(0.081)[b]	(0.046)	(0.084)	(0.081)	(0.064)[b]	(0.059)[b]	(0.032)[b]	(0.655)[b]	(0.653)[b]	(0.416)[b]
ln AGE	−0.014	−0.022	−0.011	0.011	0.008	−0.005	0.013	−0.243	−0.650	0.407
	(0.062)	(0.036)	(0.065)	(0.062)	(0.050)	(0.045)	(0.025)	(0.505)	(0.503)	(0.321)
TMI	−0.052	−0.014	0.023	0.037	−0.038	−0.016	−0.022	0.212	−0.106	0.317
	(0.058)	(0.033)	(0.060)	(0.058)	(0.046)	(0.042)	(0.023)	(0.470)	(0.469)	(0.299)

[a]Confidence at 90% level.
[b]Confidence at 95% level.

can be seen. However, at GE reactors much of the positive influence of size is through CU, i.e., larger reactors run closer to potential capacity when they are running. A closer examination of the influence of size shows that for PWRs, the elasticities of (Q/SZ) and UP with respect to size are significant for Babcock & Wilcox and Combustion Engineering reactors and almost equal. These elasticities offset each other in the influence of size on CU. In contrast, for BWRs, the elasticity of average output, Q/SZ, with respect to size, $\varepsilon(Q/SZ, SZ)$, dominates $\varepsilon(UP, SZ)$. In fact, it is $\varepsilon(Q/SZ, SZ)$ that dominates $\varepsilon(CF, SZ)$, accounting for much of the influence of size on the capacity factor. Further, for all PWRs increases in size are associated with decreases in the scheduled generation time, i.e., $\varepsilon(T-RM/T, SZ)<0$, and increases in the forced outage rate, i.e., a decrease in $(1-FOR)$. Finally, size is strongly correlated with forced outages at Westinghouse reactors. Larger reactors experience more scrams and these reactors require longer periods of downtime to recover. In summary, the influence of size on the capacity factor varies with reactor make. Therefore, one cannot reach general conclusions regarding the relationship between size and the capacity factor for all reactors, as previous papers have done.

This is also true of age. When significant, the influence of age on the service factor dominates its influence on capacity utilization: age has a positive influence at Babcock & Wilcox reactors and a negative influence at Combustion Engineering reactors. (Age is insignificant in the GE and Westinghouse samples.) Generally $\varepsilon(Q/SZ, AGE)$ offsets $\varepsilon(UP, AGE)$, i.e., $\varepsilon(Q/SZ, AGE)-\varepsilon(UP, AGE)=\varepsilon(CU, AGE)$, leaving $\varepsilon(CU, AGE)$ small and/or insignificant in every estimation. Age has no consistent influence on the service factor, scheduled generation time, or the forced outage rate. However, the number of scrams per scheduled generation time ($SCRAMS$) decreases with age for all reactors. Also, the operators of older Combustion Engineering (and, insignificantly, Westinghouse) reactors spend more time recovering from a scram, but the operators of older GE reactors (and, insignificantly, Babcock & Wilcox) spend less time. Because there is no consistent relationship between age and these measures of performance, age should not be used as proxy for learning.

Finally, consider the influence of the Three Mile Island accident (and everything else after 1979) as represented by the binary variable TMI. We can interpret the coefficient on TMI as the percentage change in the dependent variable after 1979. As one would expect, the capacity factor of Babcock & Wilcox (the manufacturer of TMI) reactors declined by an average 19% after 1979. This is equal to a decline of 4% in capacity utilization and a decline of 15% in the service factor. But the coefficient on TMI is insignificant in the CF regressions in all other samples. For Combustion Engineering reactors, the average output, (Q/SZ), increased by 13%. For GE reactors, the capacity utilization increased by 27%, but this

was offset by a fall in the service factor of 19%. For Westinghouse reactors, there were no significant differences before and after 1979. Therefore, much of what has been interpreted as a decline in productivity at all reactors from an increase in regulation after the TMI accident can be attributed to the decrease in productivity at Babcock & Wilcox reactors.

6. Summary and conclusions

Econometric studies of nuclear power plant performance have focused on the relationships between annual capacity factors and the size and age of the reactor. However, much misinterpretation of the data has occurred because of the assumption of (and availability of data for) annual periods; reactors are not brought up on January 1st and brought down in anticipation of a December 31st deadline. A more appropriate period is the refueling cycle. Without an appreciation for the dynamics of this cycle, an understanding of reactor performance is not possible. Further, analyses that associate learning with cumulative output gloss over the complexities of this industry. We need to carefully examine how reactors change over time and how reactor operators adjust to these changes.

To analyze the influence of size, age, time, and make, I have examined the capacity factor, decomposed into its components: average output, generation time, the scheduled generation period, and the forced outage rate. Previous literature has suggested that smaller and older reactors are associated with increases in performance for both pressurized and boiling water reactors. This study has shown that the influences of size, age, and time vary across make and across measures of performance. While this framework gives many insights, it does not provide a structural analysis of reactor operations. Future work will propose and estimate structural models based on the objectives of the nuclear-electric utility.

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DS09

Commonwealth Edison Company
1400 Opus Place
Downers Grove, IL 60515

60FR43174
8/18/95

J. Shapaker
M. Harper

September 12, 1995

ComEd

(3)
F

Mr. David Myers
Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Attention: Docketing and Services Branch

Subject: Commonwealth Edison (ComEd) Comments pertaining to the Proposed Generic Letter, "Revised Contents of the Monthly Operating Report"

Reference: 60 Federal Register 43174 dated August 18, 1995, Notice of Opportunity for Public Comment, "Revised Contents of the Monthly Operating Report"

The purpose of this letter is to provide comments in support of the subject proposed generic letter. ComEd believes that the proposed changes both focus the monthly report on data important to the Commission in evaluating plant performance, and improve the efficiency in preparing it for the utility.

ComEd would also like to take this opportunity to support the on-going NRC staff review or reporting requirements and supporting documentation designed to reduce reporting burdens placed on licensees without reducing the protection of public health and safety.

Sincerely,

Martin J. Vonk
Licensing Administrator
Nuclear Regulatory Services

cc: G. Dick, ComEd Generic Issues Project Administrator, NRR

k:dave\mopprpt.wpf:1

~~4509200074~~

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60FR43174
8/18/95

Florida Power & Light Company, P.O. Box 14000, Juno Beach, FL 33408-0420

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FPL

SEP 15 1995

L-95-261

J. Shapaker
M. Harper

Chief, Rules Review and Directives Branch
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: *Proposed Generic Letter; Revised Contents of the Monthly Operating Report*
(60 FR 43174, August 18, 1995)
Request for Comments

On August 18, 1995, the Nuclear Regulatory Commission published for public comment, "Proposed Generic Letter; Revised Contents of the Monthly Operating Report." These comments are submitted on behalf of Florida Power & Light (FPL), a licensed operator of two nuclear power plant units in Dade County, Florida and two units in St. Lucie County, Florida.

FPL supports the NRC's efforts to review and propose changes to the Monthly Operating Report (MOR) contents. The version of the report described in the Federal Register notice would greatly reduce FPL's reporting burden. FPL provides the following additional comments.

Currently, the Technical Specifications for FPL's four nuclear units require that the MOR be submitted by the fifteenth of each month following the calendar month covered by the report. The requested submittal date in the draft Generic Letter (GL) and Draft Regulatory Guide 1.16, Revision 4, dated August 1975, "Reporting of Operating Information - Appendix A Technical Specifications," is by the tenth of the month following the calendar month covered by the report. The Improved Standard Technical Specifications for Westinghouse and Combustion Engineering require that the report be submitted no later than the fifteenth of each month following the calendar month covered by the report. FPL requests that the submittal date be extended to the thirtieth of each month. FPL does not receive any questions from the NRC's contractor until several months (as much as 6 months) after the report is submitted. Therefore, the request for 30 days should not hinder the NRC or its contractor and is more in line with other NRC reporting requirements, such as Licensee Event Reports (LERs). The Improved Standard Technical Specifications would need revision to support an extension of the due date to 30 days.

FPL recommends that the NRC perform a review and revision of the reporting requirements associated with the Annual Operating Report, as well. Coupled with this review and the proposal to revise the MOR will be the need to revise or delete Draft Reg. Guide 1.16 (referenced above). The draft guide is outdated and is no longer needed.

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FPL recommends that the proposed GL be considered as an Administrative Letter in accordance with NRC Administrative Letter (AL) 93-01: "Announcing a New Type of NRC Generic Communication." The AL would be issued to request the submittal of voluntary information of an administrative nature that will assist the NRC in the performance of its function. Even though the MOR is required by the technical specifications, what the NRC is proposing is more of an administrative change to submit, on a voluntary basis, less information in a modified version of the MOR.

The collection of performance indicator data has increased dramatically over the last five to ten years and requires both plant and corporate resources for collection and reporting. FPL is monitoring the discussions between the Office for Analysis & Evaluation of Operation Data (AEOD) and the Institute of Nuclear Power Operations (INPO) regarding the use of INPO data as part of the agency's revamped Performance Indicator (PI) program. FPL is unclear as to the final outcome of these discussions and urges the agency to establish a goal of ensuring that the net data collection burden is not increased. Since there is a possibility the agency will be requesting new types of data, it is imperative that efforts continue toward eliminating redundant and unnecessary data submittals.

We appreciate the opportunity to comment on this proposed generic letter.

Very truly yours,

W. H. Bohlke
Vice President
Nuclear Engineering and Licensing

WHB/spt

J. Shapaker
M. Harper

8/18/95
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Nuclear Information and Resource Service

1424 16th Street NW, Suite 601, Washington, DC 20036 202-328-0002; fax: 202-462-2183; e-mail: nirsnet@aol.com

September 14, 1995

Chief
Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Comments Pertaining to the Proposed Reduction of Data In Monthly Operating Reports

To whom it may concern:

Nuclear Information and Resource Service (NIRS) is submitting comments in reference to the proposed generic letter to reduce the amount of monthly operating data nuclear power plant licensees now reported to the Nuclear Regulatory Commission (NRC), as posted in the Federal Register on August 18, 1995.

NIRS is opposed to the reduction in reporting of operational data submitted by nuclear power reactor licensees to the NRC.

Under the proposed generic letter, licensees would no longer be required to report information pertaining to the amount of power generated or the reactor service, availability and capacity factors, which NRC staff consider to have no direct bearing on nuclear safety.

NIRS disagrees with the NRC analysis that the above mentioned data on generated power and capacity factors has no bearing on nuclear safety. To the contrary, NIRS contends that a number of licensees already have displayed a predilection to prioritize electrical production over safety that the NRC has documented as performance deficiencies jeopardizing safe operation. Consequently, there exists a distinct lack of public trust that industry, once given a reduction in performance reporting requirements, will place public safety above electrical production.

NIRS contends that a reduction in operational data reporting requirements will contribute to performance deficiencies through management complacency and deviation/deterioration of reporting procedures. The reduction of monthly operating data will additionally contribute to management complacency by allowing the licensees to be less accountable to public safety-oriented scrutiny. NIRS contends that given these factors, a relaxation of reporting requirements constitutes an erosion of the NRC's commitment to a defense-in-depth strategy and lends towards

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further subordinating public health and safety to the economic benefits of the nuclear power licensee.

In reference to information contrary to the staff position that the affected data relating to power production, availability and capacity factors has no bearing on safety, NIRS specifically cites the Systematic Assessment of Licensee Performance (SALP) Report Nos. 50-317/88-99 and 50-318/88-99 for Calvert Cliffs operated by Baltimore Gas and Electric. The SALP report states in Section III Performance Analysis of Plant Operations that "The licensee was slow to recognize and acknowledge that operations performance had declined over the past few years. At the beginning of the period, licensee management's operating style appeared to unduly focus on power production, thereby contributing to performance deficiencies at the facility "

A NRC special inspection team subsequently reported on May 18, 1989 that BG&E's management's "primary emphasis on power production with less attention to safety" was in evidence of an overall lack of control of operations and maintenance, leading to NRC imposing nearly $500,000 in fines for federal regulatory violations and placing the Calvert Cliffs nuclear power plants repeatedly on the NRC's watch list.

NIRS regularly monitors monthly operating reports for capacity factors. NIRS uses the capacity factors to monitor which reactors are poor performers and trending towards poor performance. NIRS contends that poor performance indicators constitute a "red flag" on reactors that warrant scrutiny for contributing factors that directly relate to public safety. Such factors include problems with plant systems issues as in design deficiencies, age-related deterioration, and maintenance and surveillance problems. Similarly, serious management issues that jeopardize safe operation manifest in low performance indicators as evidenced by Tennessee Valley Authority's Browns Ferry 1 and 3 nuclear power reactors' long standing presence on the NRC Problem Plants List in Category 3 as "Shutdown Plants Requiring NRC Authorization To Operate and Which the NRC Will Monitor Closely." NIRS contends that a reduction in the reporting of performance indicators in monthly operating reports will hinder the public effort to monitor nuclear power plants with performance deficiencies and reactors trending toward poor performance and the associated safety-related issues. .

NIRS further contends that the proposed reduction in operational data weakens any argument by NRC and industry for moving towards a more performance-based regulation by reducing the frequency and quality of performance-based data provided by the licensee. NIRS contends that in order to justify any performance-based regulation, the performance component must be clearly demonstrable and measurable. NIRS contends that the NRC proposal to diminish reporting information would have a corresponding effect to diminish measurable data used as part of the documentation for a defense-in-depth strategy component of performance-based regulation.

Paul Gunter, Director
Reactor Watchdog Project

V001

J. Shapaker
M. Harper

8/18/95

NUCLEAR ENERGY INSTITUTE

Thomas E. Tipton

September 18, 1995

Mr. David L. Meyers
Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555–0001

ATTENTION: Docketing and Service Branch

SUBJECT: Proposed Generic Letter -- Revised Contents of the Monthly Operating Report (60 *Federal Register* 43174 - August 18, 1995) Notice of Opportunity for Public Comment

Dear Mr. Meyers:

These comments are submitted on behalf of the nuclear power industry by the Nuclear Energy Institute (NEI)[1] in response to the August 18, 1995, *Federal Register* Notice of Opportunity for Public Comment concerning the proposed generic letter, Revised Contents of the Monthly Operating Report.

NEI supports the proposed changes to the Monthly Operating Report (MOR) requirements. By focusing the data collection activity on those items necessary to support the NRC Performance Indicator Program, the NRC staff has appropriately deleted unnecessary information previously requested in Draft Regulatory Guide 1.16/Revision 4, "Reporting of Operating Information - Appendix A Technical Specifications."

Please note that the *Summary of Unit Shutdowns* request remaining in the revised MOR is redundant to the Annual Operating Report requirements contained in the technical specifications. Therefore, we recommend that the NRC staff conduct a parallel review and revision of the reporting requirements contained in the Annual

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[1] NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy issue.

Operating Report. The requirements of both reports need to be assessed concurrently such that the revised reports are complementary, not redundant.

In addition, Attachment 1 to the proposed generic letter requires the completed operating report submitted by the tenth of the month following the calendar month covered. This is inconsistent with the current requirement in many technical specifications that requires the report be submitted by the 15th of the month following the calendar month covered. Also, the requirement of the Improved Standard Technical Specifications allow up to 15 days. We strongly recommend that the wording of the proposed generic letter be changed to "*The completed operating report shall be submitted no later than the 15th of the month following the calendar month covered by the report to Document Control Desk, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001.*"

NEI supports the ongoing NRC staff review of reporting requirements and associated guidance documents to identify areas for reducing or eliminating reporting burdens placed on power reactor licensees without reducing the protection of public health and safety.

Sincerely,

Thomas E. Tipton

JHE/rs

c: Brian K. Grimes, NRC

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Department of Energy
Washington, DC 20585

September 18, 1995

J. Shapaker
M. Harper

Chief
Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Sir/Madam:

The U.S. Department of Energy (DOE), Office of Civilian Radioactive Waste Management (OCRWM), submits comments on the Proposed Generic Letter relating to Revised Contents of the Monthly Operating Report. The OCRWM has responsibility for the Nuclear Waste Fund and the management of Federal programs for recommending, constructing, and operating repositories for disposal of high-level radioactive waste (HLW) and spent nuclear fuel (SNF).

The OCRWM, with the Energy Information Administration (EIA), has assessed the proposed revisions to the contents of the Monthly Operating Report and believes that such changes will adversely impact various activities currently performed by the OCRWM. Specifically, the revisions to the form will impact the ability to the OCRWM to effectively manage the Nuclear Waste Fund (NWF). The OCRWM must ensure that the NWF cash flow is managed such that funds are invested to maximize returns and NWF receivable projections are prepared monthly.

Comments are presented below:

Effects of Operating Report Revisions on NWF Fee Estimation and Verification

Net Electrical Energy Generated (Mwh)

A. The generation data reported under the operating status are used for preparing a monthly fee Estimation Report. Each month, for the previous three months, the monthly Net Electrical Energy Generated (Mwh) data are extracted from both Form EIA-759, Monthly Power Plant Report, and the Operating Data Report (ODR), an appendix to the current NRC Operating Report, for each nuclear reactor reporting generation data. Appropriate transmission and distribution loss factors are applied and the product for each reactor is then summed to yield an approximation of the quarterly NWF fees to be collected on the last working day of each month.

Also included on the Fee Estimation report are the reason(s) for reactor shutdown as reported on the ODR Appendix D - Unit Shutdowns and Power Reductions.

Using the Form EIA-759 as the sole verifying source of data will be less precise and could potentially have an adverse effect upon the NWF

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B. Internal EIA survey data, such as those data collected on the Form EIA-759, may suffice as the sole data source. However, definitional differences of the term "net electricity generated" exist across the remittance advice Form NWPA-830G, ODR and Form EIA-759.

Elimination of the ODR would mean elimination of a major check on the net generation data reported on fee remittances, and significant modification to NWF fee verification procedures would be required.

Gross Electric Energy Generated (Mwh)

Gross generation data reported on the remittance advice are currently compared directly to the ODR gross generation. Gross generation is used as another measure to verify the accuracy of net electrical energy generated.

For NWF fee estimation and verification, the OCRWM recommends that the NRC retain the Gross Electric Energy Generated and Net Electrical Energy Generated data on the Operating Report, as separate line items or as a footnote to the report.

Effects of Operating Report Revisions on Compilation and Publication of Generation Data

EIA monitors nuclear power performance, such as capacity factors and outage rates, and publishes statistics, historical performance and analyses of trends. These data are used extensively by OCRWM, the public and private sectors. Electricity forecasts are used to support the funding projections for the OCRWM. Listed below are the data elements required by OCRWM to meet their requirements.

Rated Capacities, Both Thermal and Electric

Any changes in rated capacities should be reported. Capacity levels are necessary to compute capacity factors.

Monthly Generation Data

Monthly data for electric and thermal generation and reactor reserve shutdown hours should be reported. The DOE publishes the generation data and uses it to compute capacity factor, performance statistics, and electric heat rates.

Projected Outage Data

These data are critical for projecting short-term nuclear-powered electricity generation and thus estimated revenues paid into the NWF.

For the compilation, projection and publication of generation data, OCRWM recommends that the NRC continue to collect data on rated capacities, monthly generation, and projected outages. This is a small amount of data and should represent a minimal additional burden to the utilities. Continued collection of these data on the Monthly Operating Reports would be preferable to implementing a new and separate data collection initiative.

The OCRWM hopes that these comments will be of use to the Commission in its final evaluation of the Proposed Generic Letter.

Sincerely,

Samuel Rousso, Director
Office of Waste Acceptance, Storage
and Transportation
Office of Civilian Radioactive
Waste Management

Omaha Public Power District
444 South 16th Street Mall
Omaha, Nebraska 68102-2247
402/636-2000

September 18, 1995
LIC-95-0173

Chief, Rules Review and Directives Branch
U. S. Nuclear Regulatory Commission
Washington, DC 20555

References: 1. Docket No. 50-285
2. Federal Register Volume 60, No. 160, dated August 18, 1995

SUBJECT: Comments from Omaha Public Power District on Proposed Generic Letter Regarding Revised Monthly Operating Report Contents

In Reference 2, the NRC solicited comments on a proposed generic letter regarding revised monthly operating report (MOR) contents. The Omaha Public Power District (OPPD) offers the following comments on the proposed generic letter:

(1) Reference 2, Attachment 1, "Contents of the Monthly Operating Report," lists information that should be included in the Unit Shutdown and Power Reduction Form. This list includes a "*Narrative summary of monthly operating experience.*" However, the Unit Shutdowns Form in Attachment 1, Appendix B does not include an area for providing a narrative summary of monthly operating experience. Therefore, this item should not be included in the list.

(2) The "narrative summary of operating experience" requirement is vague. OPPD recommends that this particular item be clarified to more explicitly define the information that should be included in the narrative summary in order to provide for consistency amongst utilities.

(3) Attachment 1, Appendix A "Operating Data Report" contents will be greatly reduced to the extent that only six numbers will be requested on this form (number of hours reactor critical - monthly, year-to-date, and cumulative; and number of hours generator on-line - monthly, year-to-date, and cumulative). Rather than generating a form, this particular information could be included in the narrative summary of monthly operating experience.

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(4) The proposed generic letter should address an option to electronically transmit the MOR data forms.

In conclusion, OPPD supports the intent of the proposed generic letter for reducing the amount of information required in the MORs.

If you should have any questions, please contact me.

Sincerely,

T. L. Patterson
Division Manager
Nuclear Operations

TLP/dll

c: Winston & Strawn
L. J. Callan, NRC Regional Administrator, Region IV
S. D. Bloom, NRC Project Manager
W. C. Walker, NRC Senior Resident Inspector
Document Control Desk

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Stoller

established 1959

J. Shapaker
M. Harper

FACSIMILE

TO: Mr. David L. Meyer (Chief, Rules Review and Directives Branch/U.S. NRC)

FROM: Mr. Eric Olson (S.M. Stoller Corp.)

DATE: 19 September 1995

SUBJECT: Comments Regarding the Proposed Generic Letter: Revised Contents of the Monthly Operating Report

Dear Mr. Meyer:

I have attached a letter with my comments regarding this proposed generic letter. I apologize for sending these after the end of the comment period, but I would appreciate if they could be given due consideration.

Please contact me if you have any questions.

Very truly yours

Eric Olson

The S.M. Stoller Corporation 5700 Flatiron Parkway Boulder, Colorado 80301-5718 303-449-7220 FAX 303-443-1808

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Stoller

established 1959

September 19, 1995

Mr. David L. Meyer
Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Comments Regarding the Proposed Generic Letter; Revised Contents of the Monthly Operating Report

Dear Mr. Meyer:

I have been involved with the reporting and using of Grey Book (NUREG 0020) information since the 1970s. In the past 15 years, I have used the Grey Book information in a large variety of ways to investigate and understand the reasons why nuclear power plants perform as they do. This information has been used to help the nuclear industry improve both the performance and safety of the nuclear power plants. Certainly performance and safety are closely linked. Furthermore, the issue of unit performance and safety is becoming even more important as utilities are required to become more cost competitive.

The Grey Book information that would no longer be required to be reported with the proposed change includes very important operational and safety data. Specifically, the information regarding the thermal and electric generation is necessary to determine the overall unit capacity factors. These data are not easily available from any other source.

Therefore, I would recommend that the reporting requirements of Regulatory Guide 1.16 not be changed for the following reasons.

- The unit capacity factors provide an important aspect in the understanding of a unit's operating and safety performance.
- The forced outage rate is only part of this understanding.
- These capacity factor data are not easily available from another source for utilities or for their supporting contractors.
- The overall performance data has been used in the past to support a large number of performance and safety related studies for individual utilities, for EPRI, for INPO, etc.

Please contact me if you have any questions.

Sincerely,
Eric Olson

The S.M. Stoller Corporation 5700 Flatiron Parkway Boulder, Colorado 80301-5718 303-449-7220 FAX 303-443-1408

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McGraw-Hill, Inc.

1200 G Street, N.W., Suite 1100
Washington, D.C. 20005-3802

Date: September 15, 1995

Submitted to: U.S. Nuclear Regulatory Commission
Chief, Rules Review & Directives Branch
Washington, DC 20555

Submitted by: Margaret L. Ryan, Chief Editor, Nuclear Publications
for The Nuclear Publications, The McGraw-Hill Companies, Inc.
& McGraw-Hill's Utility Data Institute
1200 G Sreet NW, Suite 1100
Washington, DC 20005

Re: Federal Register notice of August 18, 1995: "Proposed Generic Letter; Revised Contents of Monthly Operating Report"

These comments are in response to the above-referenced Federal Register notice, which proposes to alter NRC's 21-year-old practice in collecting monthly operating data from operating U.S. nuclear power plants.

The proposed generic letter would allow utilities to stop reporting to the U.S. Nuclear Regulatory Commission (NRC) all monthly data on actual thermal, gross electric, and net electric generation, as well as power reductions, and would restrict reporting, essentially, to what happened to actually bring a unit off-line. The given reason is that the U.S. NRC does not need any other data to determine whether a plant is safe.

McGraw-Hill's Nuclear Publications have been covering the news of nuclear power for nearly 50 years and, through our newsletter Inside N.R.C., nuclear regulation for nearly 20. We and McGraw-Hill's Utility Data Institute collect independently and publish some of the same monthly data NRC collects. NRC's decision to stop publishing could leave us the sole national source of this data, a commercially attractive idea.

But we, as citizens, are appalled at NRC's assertions in this notice that our safety regulators need not track the actual productive activity of nuclear plants. Over the years, NRC officials have over the years found high correlations between safety and productive efficiency—the most productive plants have been, concurrently, the safest. To have NRC now assert that it doesn't need to know what a plant is producing seems to us incomprehensibly contradictory. With NRC's proposed cutback, citizens will be deprived of a quick and non-technical tool to see that plants are operating smoothly.

Moreover, we have seen some of the most dangerous situations develop when plants were operating at reduced or fluctuating power levels. The statistics NRC proposes to continue collecting would not let citizens see whether their neighboring nuclear plant is often encountering such situations—only whether the situations forced downtime. It would take away one measure citizens now have of assuring themselves of safety.

The Federal Register notice says the NRC no longer wishes to produce a compilation of these statistics. That, in and of itself, is no reason not to collect them. The NRC collects a great deal of information which is simply filed for the public record, as do other federal agencies.

This proposal can produce no discernible benefit to utilities (and if the NRC expects a benefit, the agency has failed to identify it in the Federal Register notice). The basic performance measures that the NRC says it doesn't need are in fact needed by the utilities themselves for their own assurances of productivity and safety. Moreover, the same data are reported to multiple other places such as power pools, state regulators, other federal regulators, vendors, etc. The outage data—the information the NRC wants to continue receiving—is probably the portion of the agency's reports that consumes the most utility staff time to report.

Though there is no identified benefit, there is harm to be done by this proposal: to the public. It is the public that will not have a place to access the most basic operating data about nuclear power plants and their safety. Arcane—and annual—NRC "performance indicators" are no substitute for basic data that can show good—and bad—performers to non-technical people. Moreover, we simply do not believe that regulators can fulfill their public duties and assess safety without knowing at what levels of efficiency plants are operating.

We do not know the motivation behind this proposal, but we hope that common sense and the NRC's commitment to its public duty will prevail, and that this draft generic letter will NOT be issued.

Thank you for this opportunity to comment.

J. Shapaker
M. Harper

60FR43174
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September 15, 1995

VIRGINIA POWER

Chief
Rules Review and Directives Branch
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Serial No. GL 95-055
NL/RPC

Dear Sir:

COMMENTS ON PROPOSED GENERIC LETTER
REVISED CONTENTS OF THE MONTHLY OPERATING REPORT

Virginia Power has reviewed the proposed generic communication, Revised Contents of the Monthly Operating Report (60 FR 43174), dated August 18, 1995. We concur with the comments separately submitted by the Nuclear Energy Institute (NEI). In addition, we submit the following comment concerning the proposed generic letter for your consideration.

We propose that the generic letter provide the option of submitting a Quarterly Operating Report in lieu of the monthly report. This option would be subject to licensees modifying related prior commitments for monthly reporting through the appropriate license amendment process. In the discussion section of the proposed generic letter, retention of the monthly operating report is based on the NRC's continuing need to receive performance indicator (PI) data at the same frequency. However, in the background section of Attachment 1, it is noted that PI reports were produced quarterly from 1987 to June 1993, then semiannually until June 1995, and annually thereafter. Virginia Power perceives that this reduction in PI reporting frequency by the NRC warrants similar consideration for a reduction in the frequency imposed on licensees for the submittal of operating reports. In addition to the proposed reduction in content, a quarterly requirement for reporting would also represent a reduction in regulatory burden without any significant impact on the PI reporting program.

Should you have any questions, please contact us.

Very truly yours,

M. L. Bowling, Manager
Nuclear Licensing and Operations Support

cc: Mr. Thomas E. Tipton
Nuclear Energy Institute
1776 I Street, N. W.
Suite 400
Washington, D. C. 20006-3708

9509220030

M. Harper

PECO ENERGY

8/10/95

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PECO Energy Company
Nuclear Group Headquarters
965 Chesterbrook Boulevard
Wayne, PA 19087-5691

September 13, 1995

Mr. David L. Meyer, Chief
Rules Review and Directives Branch
Division of Freedom of Information and
Publication Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: PECO Energy Company
Comments Concerning the Proposed Generic Letter on
"Revised Contents of the Monthly Operating Report"
(60FR43174, dated August 18, 1995)

Dear Mr. Meyer:

This letter is being submitted in response to the NRC's request for comments concerning a proposed Generic Letter (GL) 95-XX, "Revised Contents of the Monthly Operating Report," published in the Federal Register (i.e., 60FR43174, dated August 18, 1995). The purpose of this proposed GL is to inform licensees of nuclear power reactors that the NRC is requesting the submittal, on a voluntary basis, of less information in a modified version of the monthly operating report.

PECO Energy Company appreciates the opportunity to comment on this proposed GL and recommends that the content of the monthly operating report be modified to eliminate the need to track load reductions that do not result in plant shutdowns, or limit the reporting of load reductions to only those resulting in a power reduction of greater than 50%, or those associated with significant circumstances. In addition, we endorse the comments submitted by the Nuclear Energy Institute (NEI) on behalf of the nuclear power industry concerning this proposed GL.

If you have any questions, please do not hesitate to contact us.

Very truly yours,

G. A. Hunger, Jr.

G. A. Hunger, Jr.
Director - Licensing

~~9509260195~~

DS09
J. Shapaker
M. Harper

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Arizona Public Service Company
P.O. BOX 53999 • PHOENIX, ARIZONA 85072-3999

WILLIAM L. STEWART
EXECUTIVE VICE PRESIDENT
NUCLEAR

102-03473-WLS/AKK/ACR
September 17, 1995

Mr. David L. Meyer
Chief, Rules Review and Directives Branch
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Mr. Meyer:

Subject: **Palo Verde Nuclear Generating Station (PVNGS)**
Units 1, 2, and 3
Dockets Nos. STN 50-528/529/530
Proposed Generic Letter--Revised Contents of the Monthly Operating Report, 60 Federal Register 43174 (August 18, 1995)

On August 18, 1995, the Nuclear Regulatory Commission (NRC) published in the Federal Register a request for public comment on a proposed Generic Letter, Revised Contents of the Monthly Operating Report. Arizona Public Service Company (APS) herewith submits a response to the request.

APS believes that the proposed change represents an improvement. This change will save resources used currently for the sole purpose of preparing the report to the NRC. The only concern is that the proposed change provides that the report be submitted by the 10th of the month following the calendar month covered by the report. Currently, the Palo Verde Tech Specs allow the report to be submitted no later than the 15th of each month following the calendar month covered by the report. Submittal by the 15th has occasionally been a problem when holidays fall during the first weeks of a month. Operating logs must be retrieved from the control rooms, and information extracted from them. This effort must be done correctly. Thus it might not be possible for APS to consider using the provisions of the new Generic Letter if the NRC insists on submittal by the 10th of the month. For that reason, it is requested that the Generic Letter be issued in a manner that will permit retention of the current submittal date.

As an alternative to the proposed requirements it is suggested that the NRC consider an annual report for those plants that produce a comprehensive internal monthly performance indicator report and include resident inspectors on distribution. This would retain the ability of the NRC to identify degrading performance, yet provide the NRC with generic specific information for the NRC's annual industry performance report.

9510030044

Thank you for the opportunity to comment on the Proposed Generic Letter.

Should you have any questions about these comments, please call Angela Krainik at (602) 393-5421.

Sincerely,

James M. Levine for WLS

WLS/AKK/ACR/dpr

cc: Brian K. Grimes, NRC

J. Shapaker
M. Harper

Aug. 15, 1995

(14)

Marvin I. Lewis
3133 Fairfield Street
Philadelphia, PA 19136
(215)676 1291

In the matter of
1. Health Effects Valuation; letter from I. S. Kress, Chairman ACRS, to James R. Taylor, EDO NRC, dated Sept. 13, 1995.
2. Nuclear Energy Institute petitions NRC for "reduction in commitment" Federal Register Notice dated Sept. 14, 1995.
3. Petition for Rulemaking to Amend 10 CFR 50.48 from W. Rasin, NEI, to J. C. Hoyle, Secretary NRC, dated Feb. 2, 1995.
4. NRC considers one time 5 year Automatic extension of certain materials licenses. NUREG/BR 0032 Vol 15 No. 33 News Releases dated September 15, 1995.
5. NRC Staff asks public comment on proposal to reduce amount of operational data reported by nuclear power plant licensees. NUREG/BR 0032 Vol. 15 No. 31, dated September 1, 1995.
6. Compatibility with the International Atomic Energy Agency, Final Rule, FR dated Sept. 28, 1995 at Page 50248, and Regulations on the Transportation of Radioactive Material published in the Federal Register Sept. 28, 1995.
7. Three related NUREGs were issued together for comment in August 1995:
NUREG 1505 A Nonparametric Statistical Methodology for the Design and Analysis of Final Status Decommissioning Surveys.
NUREG 1506 Measurement Methods for Radiological Surveys...
NUREG 1507 Minimum Detectable Concentrations with Typical Radiation Survey Instruments...

Dear Commissioners:

This comment letter contains comments on an entire group of recent rulemakings and other actions for which the NRC has invited or allowed comment. I chose this unusual style for several specific reasons. The most important reason for which I chose this style is to demonstrate a pattern in the recent rulemakings and other actions which places the public in a very unsafe regulatory milieu.

1. Health Effects Valuation:

Presently the NRC Staff is reconsidering the ancient $1000/person rem averted health effects valuation used in the GDCs and elsewhere. $1000/person rem averted calculates into a human life being worth about $1.5 million dollars. The ACRS has suggested that $3 million/human life would be more consistent with the valuation of human life in other Federal agencies. The Staff has suggested reducing the valuation of human life by discounting the $1000/person rem. This attitude on the Staff's and NRC's part to discount human life is part of the NRC's arrogant, deficient attitude toward safety (ACRS Letter to James Taylor dated 7-20-95.)

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2. NRI Petitions for "Reductio In Commitment."

What an amazing concept! Hey, if the nuclear industry makes a contract and if they don't want to fulfill that contract, they can give themselves a "reduction in commitment." I wish that I could give myself a "reduction in commitment" from my mortgage by self determination.

This is a completely parallel situation:

1. The nuclear industry makes a commitment.

2. The NRC "would permit a licensee (nuclear industry) to change (reduction in commitment) its quality control program if it could show by analysis (esoteric paperwork) that the change does not involve an unreviewed safety question (Safety questions remain after they are reviewed!) ..."

Again the public safety is subjected to an arrogant, deficient attitude, but this time the attitude arises from the nuclear industry in petitioning for these changes.

3. The Thermolag debacle continues:

A fire retardant material failed to provide fire protection again and again in testing. One person went to jail, fines were levied, and the Thermolag remains in place performing most deficiently. The result is the nuclear industry petitions for a "reduction in commitment" and other relief thru rulemaking of 10 CFR 50.48.

Again, the nuclear industry shows its arrogant, deficient attitude where safety is concerned.

4. Forget safety: just change the rules.

With 10 CFR 30, 40, and 70, the NRC plans to extend licenses for 5 years. Many small users bring their records up to date and do essential maintenance at license renewal time like many people change their smoke alarm batteries on their birthdays. Small users need the shock of filling out a license and paying a fee to get their attention on their radioactive sources. This is one small way that the NRC shows its arrogant, deficient attitude toward safety.

5. Throw away the data before somebody finds it.

The NRC is proposing to reduce the amount of operational data reported by nuclear plant licensees. TMI #2 would have liked this rule. Think how little of the shoddy workmanship and arrogant attitude would have been reported during the accident if the licensees did not have to report his operational data.

With nuclear plants aging, deficiencies will be hidden by this rule. Errors of judgement and sins of commission need never reach the light of day. By reducing the amount of data reported sufficiently, the dying need never know where the radiation which caused their cancer came.

6. Lowest common denominator: domestic and foreign.

The Uruguay Round of GATT requires, "Each member shall ensure the conformity of its laws, regulations and administrative procedures with its obligations as provided in the annexed Agreements." (GATT WTO Marrakesh, Morocco, dated 4/15/94.)

The Annexed Agreements are tens of thousands of pages. The NRC responded to these annexed Agreements by a rule which promotes the transportation by air of plutonium and other radionuclides. The NRC again presents its arrogant, deficient attitude toward safety by promoting the air transportation of plutonium and other radionuclides while the country is in the throes of a "unabomber" scare.

7. The Devil is in the details.

Commissioner E. Gail Deplanque said in a speech on November 27, 1994, "The Devil is in the details." The Commissioner is correct. By manipulating details as described in NUREGs 1505, 1506, and 1507 an investigator could come up with any interpretation which he wished. The recent thermal ag criminal case against a thermal ag principle demonstrated that manipulation of technical data is impossible for a jury of good citizens to overcome.

The same might be said for NRC staff or just about anyone.

Our Nation has entered an era of technology where a half dozen reprobates can derail a train with crowbars, where a "unabomber" can kill for two decades, where a former lab sells bomb grade material on the black market. The NRC must wake up to the realities of today and understand that its primary agenda is safety instead of licensing at any cost.

Suggestions, request, plea for help.

Stop producing more and more radioactive wastes. We will have a lot of waste and lose our Country. Stop production now.

If the NRC is really serious about safety, call me at 215 676 1241 and I will show you how to increase safety.

Respectfully submitted,

Marvin I. Lewis

10-15-95

September 18, 1995

Chief
Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Comments on Proposed GL Regarding Monthly Operating Reports

Public Citizen's Critical Mass Energy Project is opposed to NRC's proposed reduction in the amount of monthly operating data nuclear power plant licensees now report to NRC.

The proposed change would mean that nuclear utilities would no longer report such information as the amount of power generated or the reactor service, availability and capacity factors. Although the NRC staff considers this data to have no direct bearing on nuclear safety, the staff's view is myopic. Capacity factors and availability data provide a means to assess the relative efficiency of nuclear reactors. The proposed reduction in reporting requirements seems to run counter to the NRC's new performance-based regulatory philosophy. If the NRC is going to regulate nuclear reactors based upon performance, then capacity factors and availability data would seem to be appropriate tools for any assessment.

Furthermore, as the nuclear industry enters an era of competition in the electricity market, economic competitiveness will impact on safety. As former NRC Chairman Selin indicated, economic pressures may force utilities to cut corners on safety. Data, such as reactor availability and capacity factors, can help reveal declining trends in reactor performance that may not be captured in the NRC's performance indicator program or its systematic assessment of licensee performance.

Finally, the NRC has indicated that two of the performance indicators captured in the monthly operating reports are unique to that report. Therefore, the NRC will still require monthly submittals from its licensees. Since the licensee will still be submitting a monthly report, the inclusion of capacity factors and availability data hardly represents an undue burden on licensees.

Sincerely,

James P. Riccio
Staff Attorney
Critical Mass Energy Project

Brian Grimes

(16)

RD 2, Box 132
Clearville, PA 15535
October 26, 1995

9:53

In the matter of:

60 FR 43174

1. Health Effects Valuation, letter from T. S. Kress, Chairman ACRS, to James R. Taylor, EDO NRC, dated September 13, 1995.

2. Nuclear Energy Institute petitions NRC for "reduction in commitment," Federal Register Notice dated September 14, 1995.

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NUREG 1505 A Nonparametric Statistical Methodology for the Design and Analysis of Final Status Decommissioning Surveys.
NUREG 1506 Measurement Methods for Radiological Surveys...
NUREG 1507 Minimum Detectable Concentrations with Typical Radiation Survey Instruments...

Dear Commissioners:

This comment letter contains comments on an entire group of recent rule-makings and other actions for which the NRC has invited or allowed comment. I have chosen this unusual approach to demonstrate a pattern in the recent rule-makings and other actions which place the public in a very unsafe regulatory milieu.

1. Health Effects Valuation

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2. NEI Petitions for "Reduction in Commitment"

What a novel concept! A true bonus to the nuclear industry enabling them to make a contract and if they don't want to fulfill that contract, they can give themselves a "reduction in commitment." I wish I had the option to give myself a "reduction in commitment" from my home mortgage by self determination.

This is a completely parallel situation:

1) The nuclear industry makes a commitment.

2) The NRC "would permit a licensee (nuclear industry) to change (reduction in commitment) its quality control program if it could show by analysis (esoteric paperwork) that the change does not involve an unreviewed safety question. (Safety questions remain after they are reviewed!)..."

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With 10 CFR 30, 40 and 70, the NRC plans to extend licenses for 5 years. Many small users bring their records up to date and do essential maintenance at license renewal time just as many people change their smoke alarm batteries on their birthdays. Small users need the shock of filling out license forms and paying a fee to focus their attention on their radioactive sources. This is one small way that the NRC demonstrates its blase and deficient attitude towards safety.

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The NRC is proposing to reduce the amount of operational data reported by nuclear plant licensees. TMI 2 would have liked this rule. Think how little of the shoddy workmanship and arrogant attitude would have been reported during the accident if the licensee did not have to report his operational data.

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The Annexed Agreements are tens of thousands of pages. The NRC responded to these annexed Agreements by a rule which promotes the transportation by air of plutonium and other radionuclides. The NRC again presents its arrogant, inhumane attitude towards safety by promoting the air transportation of plutonium and other radionuclides while the country is in the throes of reeling from major terrorist acts -- Arizona train derailment, Oklahoma Federal Building bombing and New York City building bombing.

7) The Devil is in the details.

Commissioner F. Gail Deplanque said in a speech on November 29, 1994 "The Devil is in the details." The Commissioner is correct. By manipulating details as described in NUREGs 1505, 1506 and 1507 an investigator could come up with any interpretation he wished. The recent Thermolag criminal case against a Thermolag principle demonstrated that manipulation of technical data is impossible for a jury of good citizens to overcome.

The same night, he said for NRC staff or just about anyone -- Our Nation has entered an era of technology where a half dozen reprobates can derail a train with crowbars, where a "unabomber" can kill for two decades, where a former foe sells bomb grade material on the black market. The NRC must wake up to the realities of today and understand that its primary agenda is safety instead of licensing at any cost.

An effective, all-inclusive public safety policy must always be incorporated in all regulations promulgated by the NRC. To do less than this sows massive seeds of public distrust and disgust.

I find all of the above regulations abhorrent to the public at large and heartily recommend that they be removed from any further consideration.

Do what is morally right.

Sincerely,

Karl J. Novak

cc - Senator Arlen Specter
Senator Rick Santorum
Congressman Bud Shuster

RESOLUTION OF PUBLIC COMMENTS

ATTACHMENT 9

COMMENT RESOLUTION - PROPOSED GENERIC LETTER
REVISED CONTENTS OF THE MONTHLY OPERATING REPORT

On August 18, 1995, the NRC published a notice of opportunity for public comment in the *Federal Register* (60 FR 43174) on a proposed generic letter that addresses revised contents of the monthly operating report. The purpose of the proposed generic letter is to request the submittal, on a voluntary basis, of less information in a modified version of the monthly operating report. The information to be deleted from the monthly operating report is not considered essential to the safety mission of the agency. Comments were due on September 18, 1995.

Sixteen letters were received in response to the notice. Commenters included 6 utilities, 2 private industries, 1 university, 1 industry organization, 1 government agency, 3 public interest groups, and 2 individuals (no affiliation). Comments were aggregated into major issues; staff responses to these issues are presented below. The letters that were received are attached.

1. MONTHLY OPERATING REPORT DATA PROPOSED FOR DELETION RELATED TO SAFETY

Comments:

About half of the commenters disagreed that the information proposed for deletion is not an essential part of the safety mission of the agency. Examples of such comments include: "We strongly disagree that the reporting of such data as availability and capacity factor have no bearing on nuclear plant safety"; "As nuclear power plants age and as these plants face increased competition from other sources of power, the operations data point toward possible safety problems"; "Certainly performance and safety are closely linked.... The unit capacity factors provide an important aspect in the understanding of a unit's operating and safety performance"; and "NRC officials have over the years found high correlations between safety and productive efficiency."

In contrast with commenters who believe the most productive plants (high capacity factor and high availability) are the safest, two commenters were concerned that a primary emphasis on power production would result in less attention to safety, and that economic pressures may force utilities to cut corners on safety.

Response:

The NRC has determined that availability and capacity factor data should continue to be reported in the monthly operating report.

2. PUBLIC NEED FOR MONTHLY OPERATING REPORT DATA PROPOSED FOR DELETION

Comments:

Several commenters stated that there is a public need for the information being proposed for deletion from the Monthly Operating Report since it provides a way for the public to monitor nuclear power plant safety. Examples of such comments are: "....a reduction in the reporting of performance indicators in the Monthly Operating Reports will hinder the public effort to monitor nuclear power plants with performance deficiencies and reactors trending toward poor performance and the associated safety-related issues," and "With NRC's proposed cutback, citizens will be deprived of a quick and non-technical tool to see that plants are operating smoothly."

One commenter was also concerned that the NRC would no longer collect data on nuclear power plants operating at reduced or fluctuating power. The commenter felt that citizens would no longer be able to see whether neighboring plants are operating in a condition that could lead to dangerous situations.

Response:

With respect to the information that the public may need to monitor operational safety at nuclear power plants, all plant outage information will continue to be provided in the Monthly Operating Report, and the critical hours and generator on-line hours during the month will still be provided so that the public can tell at a glance whether a unit was operating smoothly. The reasons for, and durations of, both scheduled and forced outages will still be presented in the reports. In addition, the NRC has determined that availability and capacity factor data should continue to be reported in the monthly operating report.

Also, any power reduction initiated because a shutdown is required by a plant's Technical Specifications, even if the shutdown is not completed, will still be reportable within one hour under 10 CFR 50.72, and this information will continue to be made publicly available. The information on power reductions that is to be deleted from the Monthly Operating Report is not useful to the public for assessing current plant operational safety since by the time this information appears in the Monthly Operating Report, the circumstances surrounding the operation at reduced or fluctuating power will have passed and already been assessed for potential safety significance by the licensee and NRC.

3. DOES PROPOSED GENERIC LETTER BENEFIT LICENSEES BY REDUCING THEIR BURDEN?

Comments:

Several commenters stated that the reduced reporting offers utilities little or no benefit in reduced burden. For example, one commenter stated that "This proposal can produce no discernible benefit to utilities." Another commenter stated that "Since licensees will still be submitting a monthly report, the

inclusion of capacity factors and availability data hardly represents an undue burden on licensees." However, the licensees who actually prepare these reports do not agree. One utility stated that the proposed changes to the monthly operating report would substantially reduce their reporting burden. Another utility stated that "This change will save resources used currently for the sole purpose of preparing the report to the NRC."

Response:

Several utilities have declared that reduced reporting will save resources. No utility stated that reduced reporting will not reduce their burden. Since adoption of the proposed changes in reporting is voluntary, utilities that believe the proposal will not reduce their burden may continue to report as in the past. From the letters received, though, it appears that licensees will stand to benefit from the proposed generic letter by not having to devote as many resources to the preparation of the Monthly Operating Report.

4. OTHER USES OF MONTHLY OPERATING REPORT DATA PROPOSED FOR DELETION

Comments:

Several commenters discussed the usefulness of the Monthly Operating Report data for other than direct safety applications, and the difficulty of getting this data from other sources. A government agency that commented on the proposal uses gross and net electrical energy generated, thermal and electric rated capacities, monthly generation data, and projected outage data to carry out its mission of managing the Nuclear Waste Fund. They argue that the elimination of this data from the NRC Monthly Operating Report will eliminate an independent means of verifying the data reported directly to them.

Response:

The NRC has determined that availability and capacity factor data should continue to be reported in the monthly operating report.

5. ISSUES OF SUBMITTAL DATE AND FREQUENCY

Comments:

Several of the commenters who favored the proposed generic letter questioned the need for the present frequency and submittal date of the report. There were suggestions to change the frequency of the report from monthly to quarterly or annually, and to change the submittal date from the 10th day of the month following the report period (month) to the 15th or 30th of the following month.

Several letters also noted that some plant Technical Specifications, including the Standard Technical Specifications, require such reports on the 15th of the month following the report month.

Response:

Although the Performance Indicator (PI) Report will be published annually starting in Fiscal Year 1996, the Commission has directed the staff to collect PI data on a continuing basis. In addition to an annual PI Report, PI data is also needed to support semiannual Senior Management Meetings, program office and agency annual reports, and special requests by the Commission for current PI information. Data is, therefore, still needed on a monthly basis.

Since many plant Technical Specifications, including the Standard Technical Specifications, state that the Monthly Operating Report is due on the 15th of the month following the report month, this comment is accepted, and the due date will be changed from the 10th to the 15th of the month in the generic letter.

6. FORM OF SUBMITTAL

Comments:

One commenter provided several comments on the form of the report. One comment was that there is not enough space in the unit shutdown form (Appendix B) for a narrative summary. The commenter also stated that instructions for this summary are vague. Another comment stated that instead of a form for the operating data report (Appendix A), a narrative summary of monthly operational experience would be sufficient. Finally, it was suggested that the generic letter should address an option to transmit the data electronically.

Response:

Appendices A and B are not official NRC forms, such as the forms used for Licensee Event Reports (Form 366), but rather are suggested layouts for presenting the information. Nevertheless, Appendix B (Unit Shutdowns) in the generic letter will include space for a narrative summary. Instructions for the summary were inadvertently left out of the Federal Register notice; they will be included in the final generic letter. The instructions will be essentially the same as were provided in Regulatory Guide 1.16, but with references to load reductions removed. In the Operating Data Report (Appendix A), use of the form is not required, but the data should be clearly identified, and a standard layout would help prevent errors in entering the data into databases.

The suggestion that the data be transmitted electronically is an excellent one that could significantly speed up the process of submitting data, and may prevent human errors in the Performance Indicator Program data entry. The NRC is currently assessing various means for transmitting data electronically.

7. REVIEW ANNUAL OPERATING REPORT REQUIREMENT FOR REDUCED REPORTING

Comments:

Two commenters recommended that the NRC perform a parallel review of reporting requirements for the Annual Operating Report to avoid potential redundant reporting requirements.

Response:

This generic letter only addresses the Monthly Operating Report. The NRC intends to review Annual Operating Report requirements, also discussed in Regulatory Guide 1.16, for potential reductions in reporting, in the future. The Annual Operating Report will be addressed by the NRC Reporting Requirements Review Panel. This group is fully aware of the activities associated with potential revisions in the Monthly Operating Report requirements, and will address any potential redundancy in the Annual Operating Report reporting requirements.

COMMENT RESOLUTION ISSUES - PROPOSED GENERIC LETTER
REVISED CONTENTS OF THE MONTHLY OPERATING REPORT

Org.	Opposes MOR GL	Supports MOR GL	Is MOR Data Related to Safety	Benefits Licensees / Reduces Burden?	Submittal Date/ Frequency	Other Uses of MOR Data	Form of Submittal Issues	Review Annual Oper Report ?
Greenpeace	X		X					
Dr. Geoffrey Rothwell	X		X					
Commonwealth Edison		X		X				
Florida Pwr & Light		X			X			X
Nuc Info and Res Serv	X		X					
Nuclear Energy Inst		X			X			X
Dept. of Energy	X			X		X		
Omaha Pub Pwr Dist		X					X	
Stoller Corp	X		X			X		
McGraw Hill	X		X	X		X		
Virginia Power		X			X			
PECO Energy		X						
Arizona Pub. Serv Co		X		X	X			

Marvin Lewis	X		X					
Karl Novak	X		X					
Public Citizen	X		X	X				

CRGR REVIEW PACKAGE

PROPOSED ACTION: Issue a draft generic letter notifying licensees that the NRC is requesting the submittal of less information in a modified version of the monthly operating report (MOR). A notice of opportunity for public comment on the draft generic letter was published in the *Federal Register* and comments have been incorporated into the draft generic letter. No licensee action or written response is required.

CATEGORY: 2

RESPONSE TO REQUIREMENTS FOR CONTENT OF PACKAGE SUBMITTED FOR CRGR REVIEW

(i) The proposed generic requirement or staff position as it is proposed to be sent out to licensees. Where the objective or intended result of a proposed generic requirement or staff position can be achieved by setting a readily quantifiable standard that has an unambiguous relationship to a readily measurable quantity and is enforceable, the proposed requirement should merely specify the objective or result to be attained, rather than prescribing to the licensee how the objective or result is to be attained.

See the proposed generic letter, "Revised Contents of the Monthly Operating Report" (Attachment 1).

(ii) Draft staff papers or other underlying staff documents supporting the requirements or staff positions. (A copy of all materials referenced in the document shall be made available upon request to the CRGR staff. Any Committee member may request the CRGR staff to obtain a copy of any reference material for his or her use.)

The purpose of this generic letter is to notify licensees that the NRC is requesting the submittal of less information in a modified version of the monthly operating report. The following documents support this staff action:

SECY-94-093, "NRC Staff Assessment of Reporting Requirements for Power Reactor Licensees," April 1, 1994.

Staff requirements memorandum (SRM) dated April 26, 1994, endorsing staff plans to assess reporting requirements for power reactor licensees and initiate rulemaking or other appropriate actions consistent with the recommendations in SECY-94-003, "Plan for Implementing Regulatory Review Group Recommendations," January 7, 1994.

Draft Regulatory Guide 1.16, Revision 4, "Reporting of Operating Information - Appendix A, Technical Specifications," August 1975.

ATTACHMENT 2

(iii) Each proposed requirement or staff position shall contain the sponsoring office's position as to whether the proposal would increase requirements or staff positions, implement existing requirements or staff positions, or would relax or reduce existing requirements or staff positions.

The proposed generic letter identifies the information needed by the staff to support the NRC Performance Indicator Program, the Office for Analysis and Evaluation of Operational Data (AEOD) Annual Report (NUREG-1272), and regular information requests from the Congress, other government agencies and the Commission; this information represents a reduction in scope over the information previously requested. Acceptance by the licensees of the reduced scope of reporting is voluntary.

(iv) The proposed method of implementation with the concurrence (and any comments) of OGC on the method proposed. The concurrence of affected program offices or an explanation of any nonconcurrences.

The method of implementation will be the proposed generic letter; licensees may provide the reduced scope of information being requested on a voluntary basis. Both AEOD and the Office of the General Counsel (OGC) have reviewed the proposed generic letter; AEOD concurs with the reduced scope of information being requested and OGC expressed no legal objection to the method.

(v) Regulatory analyses conforming to the directives and guidance of NUREG/BR-0058 and NUREG/CR-3568. (This does not apply for backfits that ensure compliance or ensure, define, or redefine adequate protection. In these cases a documented evaluation is required as discussed in IV.B.(ix).)

A regulatory analysis is not required because, as stated above, the generic letter is requesting the submittal of less information than previously requested in Draft Regulatory Guide 1.16, Revision 4, and provides for voluntary compliance on the part of licensees.

(vi) Identification of the category of reactor plants to which the generic requirement or staff position is to apply (that is, whether it is to apply to new plants only, new OLs only, OLs after a certain date, OLs before a certain date, all OLs, all plants under construction, all plants, all water reactors, all PWRs only, some vendor types, some vintage types such as BWR 6 and 4, jet pump and nonjet pump plants, etc.).

The proposed generic letter would apply to all operating nuclear power reactors.

(vii) For backfits other than compliance or adequate protection backfits, a backfit analysis as defined in 10 CFR 50.109. The backfit analysis shall include, for each category of reactor plants, an evaluation which demonstrates how the action should be prioritized and scheduled in light of other ongoing regulatory activities. The backfit analysis shall document for consideration information available concerning any of the following factors as may be appropriate and any other information relevant and material to the proposed action:

(a) Statement of the specific objectives that the proposed action is designed to achieve;

(b) General description of the activity that would be required by the licensee or applicant in order to complete the action;

(c) Potential change in the risk to the public from the accidental release of radioactive material;

(d) Potential impact on radiological exposure of facility employees and other onsite workers;

(e) Installation and continuing costs associated with the action, including the cost of facility downtime or the cost of construction delay;

(f) The potential safety impact of changes in plant or operational complexity, including the relationship of proposed and existing regulatory requirements and staff positions;

(g) The estimated resource burden on the NRC associated with the proposed action and the availability of resources;

(h) The potential impact of differences in facility type, design, or age on the relevancy and practicality of the proposed action;

(i) Whether the proposed action is interim or final, and if interim, the justification for imposing the proposed action on an interim basis;

(j) How the action should be prioritized and scheduled in light of other ongoing regulatory activities. The following information may be appropriate in this regard:

1. The proposed priority or schedule,
2. A summary of the current backlog of existing requirements awaiting implementation,
3. An assessment of whether implementation of existing requirements should be deferred as a result, and

4. Any other information that may be considered appropriate with regard to priority, schedule, or cumulative impact. For example, could implementation be delayed pending public comment?

Backfit considerations do not apply because acceptance of the reduced scope of reporting is voluntary.

(viii) For each backfit analyzed pursuant to 10 CFR 50.109(a)(2) (i.e., not adequate protection backfits and not compliance backfits), the proposing Office Director's determination, together with the rationale for the determination based on the consideration of paragraph (i) and (vii) above, that:

(a) There is a substantial increase in the overall protection of public health and safety or the common defense and security to be derived from the proposal; and

(b) The direct and indirect costs of implementation, for the facilities affected, are justified in view of this increased protection.

Backfit considerations do not apply because acceptance of the reduced scope of reporting is voluntary.

(ix) For adequate protection or compliance backfits evaluated pursuant to 10 CFR 50.109(a)(4)

(a) a documented evaluation consisting of:
(1) the objectives of the modification
(2) the reasons for the modification
(3) the basis for invoking the compliance or adequate protection exemption.

(b) in addition, for actions that were immediately effective (and therefore issued without prior CRGR review as discussed in III.C) the evaluation shall document the safety significance and appropriateness of the action taken and (if applicable) consideration of how costs contributed to selecting the solution among various acceptable alternatives.

Backfit considerations do not apply because acceptance of the reduced scope of reporting is voluntary.

(x) For each evaluation conducted for proposed relaxations or decreases in current requirements or staff positions, the proposing Office Director's determination, together with the rationale for the determination based on the considerations or paragraphs (i) through (vii) above, that:

(a) The public health and safety and the common defense and security would be adequately protected if the proposed reduction in requirements or positions were implemented, and

(b) The cost savings attributed to the action would be substantial enough to justify taking the action.

Public health and safety and the common defense and security would continue to be adequately protected if the proposed reduction in the scope of information requested was implemented. The staff has eliminated the submittal of unnecessary information because it has no impact on the regulatory activities of the agency.

Some cost savings would accrue from having to compile and submit less information.

(xi) For each request for information under 10 CFR 50.54(f) (which is not subject to exception as discussed in III.A) an evaluation that includes at least the following elements:

(a) A problem statement that describes the need for the information in terms of potential safety benefit.

(b) The licensee actions required and the cost to develop a response to the information request.

(c) An anticipated schedule for NRC use of the information.

(d) A statement affirming that the request does not impose new requirements on the licensee, other than for the requested information.

This generic letter does not request information under 10 CFR 50.54(f).

(xii) An assessment of how the proposed action relates to the Commission's Safety Goal Policy Statement.

Although not quantifiable, it is recognized that how well a plant is operated is a vital component of plant safety. Therefore, it is essential that the staff continue to gather information for its independent analysis of nuclear power reactor safety performance trends.

April 1, 1994 SECY-94-093

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: NRC STAFF ASSESSMENT OF REPORTING REQUIREMENTS FOR POWER REACTOR LICENSEES

PURPOSE:

To inform the Commission about the activities of the task force formed to assess reporting requirements for power reactor licensees, including plans for evaluating the need or frequency for reporting requirements contained in the regulations, technical specifications or industry codes and standards, commensurate with the implementation plan for the Regulatory Review Group recommendations (SECY-94-003).

SUMMARY:

This paper describes the activities of a task force to determine if some reporting requirements imposed on power reactor licensees can be reduced in scope or eliminated. As part of this effort, the task force selected a test group of 11 reporting requirements for review to develop a means for documenting staff rationale when assessing reporting requirements. The approach for continuing the effort to assess reporting requirements that the industry and the NRC staff identified for possible deletion or revision is discussed; the schedule for accomplishing this is compatible with Topic Area No. 59 (Reporting Requirements) of the implementation plan for the Regulatory Review Group recommendations. Also, the staff will initiate rulemaking or take other appropriate regulatory actions based on the recommendations of the Regulatory Review Group and the Reporting Requirements Task Force, and will investigate the efficacy of applying electronic transmission techniques for data, reports and test results.

NOTE: TO BE MADE PUBLICLY AVAILABLE WHEN THE FINAL SRM IS MADE AVAILABLE

Contact: Brian K. Grimes, NRR
504-1163

James W. Shapaker, NRR
504-1151

9404070203- 5pp

ATTACHMENT 6

BACKGROUND:

In mid-January 1992, the Chairman asked the staff to review the reporting requirements imposed on power reactor licensees to determine if some requirements could be reduced in scope or eliminated. Shortly thereafter, two Presidential directives, dated January 28, 1992, requested that the Commission and other energy and environmental agencies work together to streamline regulatory requirements and set aside a 90-day period for the evaluation of existing regulations. The Commission directed the Committee to Review Generic Requirements (CRGR) to use appropriate inputs from the public, the NRC staff, and other Federal agencies to conduct a special regulatory review addressing the spirit of the concerns raised by the President. After completing its review, the CRGR recommended revising the regulations in eight areas (SECY-92-141, dated April 17, 1992) for which the CRGR could clearly make a determination in the allotted 90 days that a reduction in the regulatory burden could be achieved without in any way reducing the public health and safety or common defense and security.

In conducting its review, the CRGR issued a Federal Register notice on February 24, 1992 (57 FR 6299), seeking public comment, and also sought comments from the NRC staff; the CRGR held a public meeting to discuss the comments that were received. Among other concerns, the industry considered the magnitude of reporting requirements to be burdensome and some reporting requirements to be unnecessary. In addition, the industry expressed concern over NRC guidance documents issued to provide interpretations of reporting requirements in the regulations and over reporting requirements contained in license documents such as the technical specifications. Because many of the comments received were outside the scope or criteria of the special CRGR review, their resolution was deferred to other agency initiatives for evaluating reporting requirements. Therefore, the staff decided to expand the scope of this effort, and consider the potential for reducing reporting requirements in a comprehensive and integrated manner.

In a memorandum from the Executive Director for Operations, dated May 7, 1992, the staff described plans for (1) soliciting the views of the nuclear power industry and other interested parties on reducing reporting requirements and (2) issuing a report with staff recommendations on modifying certain reporting requirements and conducting an expanded review of the reporting requirements for power reactor licensees. Public comment was obtained through the issuance of a Federal Register notice (57 FR 27394, dated June 19, 1992); the comment period expired September 30, 1992. Enclosure 1 identifies those who commented and characterizes the comments that were received.

A multi-office task force was established to support this effort. The members of the task force are given in Enclosure 2. To facilitate staff involvement, the task force developed a User Need Statement form for the staff to use in developing the justification for reporting requirements. To affirm the utility of the User Need Statement, the task force identified a test group of 11 reporting requirements for evaluation by the staff. Enclosure 3 includes (1) a list of the 11 reporting requirements that comprise the test group,

along with the User Need Statements prepared by the cognizant line organizations, (2) a compilation of the results from the User Need Statements and (3) comment resolution statements for those public comments received in response to the Federal Register notice that are related to the test group of reporting requirements. The task force met in January 1993 to discuss various approaches for continuing the review of the reporting requirements and to evaluate the need to modify the User Need Statements.

In January 1993, the Executive Director for Operations established the Regulatory Review Group (RRG). The RRG conducted a disciplined review of power reactor regulations and related processes, programs and practices. The findings and recommendations of the RRG focused on identifying specific problems, their cause, and achievable solutions. In August 1993, the RRG issued its final report containing recommendations aimed at reducing the regulatory burden on power reactor licensees and strengthening NRC administrative practices. The RRG report discussed several key areas in which changes in the way NRC conducts business could significantly reduce industry and NRC staff costs without adversely affecting the level of safety at operating plants. In examining agency administrative practices, one of the areas proposed by the RRG for possible efficiencies was the area of reporting requirements.

The staff prepared an implementation plan for the recommendations of the RRG (SECY-94-003, dated January 7, 1994). The plan contains general implementation strategies, priorities, major milestones and target schedules for the timely resolution of the recommendations. In this regard, the resolution approach being recommended by this task force for the review of the reporting requirements for power reactor licensees is compatible with the implementation plan for the RRG recommendations.

DISCUSSION:

Public comments that have been received in response to Federal Register notices soliciting the views of the nuclear power industry and other interested parties on reducing regulatory burdens and reporting requirements suggest a need for the NRC staff to look at power reactor reporting requirements. The comments stated that the NRC staff is in a better position than the industry to judge whether certain reporting requirements are still needed. If the NRC is to conduct a comprehensive review of its reporting requirements, which would involve substantial resources from the line organizations, the NRC must adopt an efficient and effective approach.

Irrespective of the approach that is adopted to reassess reporting requirements, the staff will need to document the rationale for the conclusions it reaches. This will help ensure that safety objectives are adequately addressed and that consistent decisions are made. Therefore, a User Need Statement was prepared for use in documenting the justification for reporting requirements and recommendations for change. The utility of the User Need Statement was affirmed by having the task force members apply it to a test group of 11 reporting requirements. The User Need Statements were then

sent to the appropriate line organizations for further development. If the views of the task force differed from those expressed by the responsible line organization, the task force discussed them with the line organization, and the User Need Statement was revised to reflect a staff concensus.

The User Need Statement is considered to be an effective tool for use by the staff to document, in a consistent manner, the rationale for retaining reporting requirements or recommending changes, including the deletion of reporting requirements. However, in applying the User Need Statement to the test group, the task force noted that there were various interpretations of the information requests. As a result, the User Need Statement was revised to enhance its usability; the revised form is provided in Enclosure 4.

The reporting requirements comprising the test group were selected because (1) they came from several sources (namely, the regulations, the technical specifications, and Section XI of the ASME Code, which is incorporated by reference into 10 CFR Part 50); (2) they were addressed by the Nuclear Management and Resources Council (NUMARC) in their response to the June 19, 1992 Federal Register notice; (3) they involve several NRC line organizations; (4) a spectrum of recommendations concerning the disposition of the reporting requirements would likely result; and (5) they would give an indication of the level of effort needed to prepare User Need Statements for other reporting requirements.

The results of the task force review of the test group of reporting requirements are presented in Enclosure 3. The line organizations or the task force recommended that four of the reporting requirements be eliminated (Items 1, 4, 5, and 7 in Table 1 of Enclosure 3), that five of the reporting requirements be revised or further explained to reduce their scope (Items 2, 8, 9, 10 and 11), and that two of the reporting requirements be retained as currently stated (Items 3 and 6).

Several insights were gained from the evaluation of the 11 test case reporting requirements that will be factored into the follow-on effort addressed in this paper to reduce regulatory burden; for example:

1. The line organizations are best qualified to prepare the justification for the retention, elimination, or revision of reporting requirements; they can provide a safety perspective that is essential to sound decisionmaking.

2. There is frequently more than one organization using the information being reported, and it is not always obvious which line organization should be asked to exercise control over the destiny of a reporting requirement. Therefore, the use of a short term task group to assign organizational ownership for each reporting requirement is desirable.

3. The NRC should investigate the application of electronic transmission techniques for data, reports, and test results as part of its strategic information technology planning process.

Following is a discussion of the approach and schedule for continuing the effort to assess reporting requirements for power reactor licensees which the industry and the NRC staff identified for possible deletion or revision. The line organizations will be required to allocate resources to conduct detailed reviews of the reporting requirements within their purview and proceed with rulemaking or other appropriate licensing actions (e.g., generic letters for line item improvements to the Standard Technical Specifications that pertain to reporting requirements) to reduce reporting burdens.

No oversight group will be associated with this approach, although an initial effort by a small task group will be necessary to (a) compile the reporting requirements identified by the Regulatory Review Group and the respondents to the aforementioned Federal Register notices as being unduly burdensome, duplicative, or otherwise unnecessary and in need of revision, (b) assign office/division ownership to the reporting requirements contained in the regulations, the Technical Specifications, generic communications, plant operating licenses and licensee controlled documents, and (c) prioritize office/division assignments and propose interim milestones for assignments that are compatible with the overall schedule (discussed below) to permit periodic assessments of progress.

The overall schedule for the effort will be in keeping with the implementation plan for the Regulatory Review Group recommendations. The line organizations will complete the assessment of the body of reporting requirements identified in the public comments and in the Regulatory Review Group implementation plan (SECY-94-003) by December 1995. The Office of Nuclear Regulatory Research (RES) will prepare draft rule changes for presentation to the Commission prior to the end of June 1996, and will publish final versions prior to the end of December 1996. The line organizations will undertake other appropriate licensing actions to address changes in the reporting requirements that do not involve rule changes prior to the end of December 1996.

In parallel with the effort to continue the review of NRC reporting requirements to eliminate duplicate requirements and information/data requirements without a clear nexus to safety, NRC staff will take the following actions based on the recommendations of the Regulatory Review Group and the Reporting Requirements Task Force:

- The Office of Nuclear Regulatory Research (RES) will be requested to initiate rulemaking to address the following matters:

  1. Eliminate 10 CFR 73.71(c)(2), which requires the quarterly submittal of safeguards event logs.

  2. Revise 10 CFR 55.25 to eliminate the notification of operator incapacity due to a disability or illness and refer to a similar reporting requirement under 10 CFR 50.74(c) for this requirement.

3. Revise 10 CFR 50, Appendix J to eliminate the requirement to submit the summary technical reports of preoperational and periodic leakage rate tests; rather, require the reports to be made available at the plant sites for NRC review.

The proposed schedule for accomplishing the above rulemaking actions is compatible with the plan for implementing the RRG recommendations (SECY-94-003), namely, the staff will provide draft rule changes to the Commission prior to the end of September 1994 and will publish final rule changes prior to the end of February 1995.

- Since the ASME Code is endorsed by NRC regulations (see 10 CFR 50.55a), the NRC will take a proactive role through its representatives on the ASME Code committee to modify code reporting requirements to reduce licensee burden; in particular, the NRC will propose to eliminate the need to submit inservice inspection (ISI) reports to the NRC following each refueling outage (ASME Code Section XI, Article IWA-6000).

- RES will be requested to revise the monthly operating report (Regulatory Guide 1.16), which plant Technical Specifications require licensees to submit, to eliminate currently reportable information that is not essential to the Performance Indicator Program or that may be available from another source.

  The proposed schedule for accomplishing this will be in keeping with the implementation plan in SECY-94-003; the staff will publish a draft of the revised regulatory guide prior to the end of June 1994, and the final regulatory guide will be published prior to the end of January 1995.

This review of the reporting requirements for power reactor licensees is in keeping with the expectations of the industry, as expressed in the letters received in response to Federal Register notices. These letters contain a recurring theme, namely, that while the nuclear power industry can provide its views on the impact of certain reporting requirements, it is up to the NRC to properly identify the information that is required to fulfill its obligation to protect the health and safety of the public and to propose appropriate changes. Therefore, the expectation of the industry is that the NRC will continue to conduct reviews of its reporting requirements and evaluate the need for prescribed reports and the information they contain.

COORDINATION:

The Office of General Counsel has reviewed this paper and has no legal objections.

RECOMMENDATIONS:

That the Commission note that, absent other directions after 10 working days:

1. The line organizations will proceed to assess the reporting requirements for power reactor licensees which the industry and the NRC staff have identified for possible deletion or revision, and to initiate proposed rulemaking or other appropriate regulatory actions on a schedule that is compatible with SECY-94-003 recommendations for Topic Area No. 59.

2. RES will be requested to initiate a combined rulemaking, and cognizant line organizations will initiate appropriate generic communications based on the initial recommendations of the Regulatory Review Group and the Reporting Requirements Task Force.

3. NRC staff will investigate the efficacy of applying electronic transmission techniques for data, reports, and test results. This will be done in conjunction with the development of the information technology plan for the agency.

James M. Taylor
Executive Director
for Operations

Enclosures:
1. Respondents to Federal Register Notice Solicitation for Public Comment
2. Task Force to Review Reporting Requirements for Power Reactor Licensees
3. Test Group of Reporting Requirements Selected for Evaluation
4. User Need Statement for NRC Power Reactor Reporting Requirements

SECY NOTE: In the absence of instructions to the contrary, SECY will notify the staff on Monday, April 18, 1994, that the Commission, by negative consent, assents to the action proposed in this paper.

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TEST GROUP OF REPORTING REQUIREMENTS SELECTED FOR EVALUATION

1.	ASME Code	Inservice Inspection summary report, required by IWA-6220 to be submitted within 90 days of the completion of each refueling outage (DE/NRR)
2.	10 CFR 50.59(b)(2)	Annual reports of facility changes, tests, and experiments (recently changed to refueling basis) (ADPR/NRR)
3.	10 CFR 70.9(b)	Notification within two working days of information having significant implication for public health and safety or common defense and security (FCSS/NMSS)
4.	10 CFR 73.71(c)(2)	Quarterly safeguards event log entries report (DRSS/NRR and FCSS/NMSS)
5.	10 CFR 50.74	Notification of change of operator status due to transfer, termination or disability (DRCH/NRR)
6.	10 CFR 50, Appendix I, Section IV.A.3	Report on higher than normal release rates (DRSS/NRR)
7.	10 CFR 50, Appendix J, Section V.B	Containment Integrated Leak Rate Test summary technical report (DSSA/NRR)
8.	TS 4.4.5.5(a)	Summary report of SG tubes plugged (DE/NRR)
	TS 4.4.5.5(b)	Results of SG tube inservice inspection (DE/NRR)
	TS 4.4.5.5(c)	Special Report of SG tube inspection results that fall in Category C-3 (DE/NRR)
	TS 4.4.5.5(d)	Results of SG tube inspection for which alternate tube plugging criteria were used (DE/NRR)
9.	TS 6.9.1.3	Cycle Startup Report (DSSA/NRR)
10.	TS 6.9.1.4	Annual Operating Report (DRSS/NRR)
11.	TS 6.9.1.8	Monthly Operating Report (including refueling data and PORV/safety valve challenges) (DSP/AEOD)

ENCLOSURE 3

TEST CASE 11

USER NEED STATEMENT FOR NRC POWER REACTOR REPORTING REQUIREMENTS

1. Identification/Statement of reporting requirement

   TS 6.9.1.5 - Monthly Operating Reports (MOR)

   The licensee MOR contains operating statistics with data listed for the month being reported, the year-to-date and cumulative. It also includes details of unit outages and power reductions, as well as other information such as planned outages and changes in unit capacity and restrictions limiting power generation.

2. Type of report

   a. Routine report (Operating statistics and outage description for nuclear power plants)

      (i) Frequency (monthly)

      (ii) Timeliness of submittal (By the 15th of the month following the month of operation)

3. Purpose

   The original impetus for the monthly operating report came as a result of the Arab Oil Embargo of 1973-74. Prior to that time the licensees were asked to provide some of the kinds of information requested in the monthly report, but it was reported typically on a 6 month basis. The information previously requested also was not so detailed and without the specificity of the MOR requirements. For example, the licensee was asked to provide a system and component code for each outage that corresponded to the Licensee Event Report codes.

   The safety objective for the MOR was not clearly stated, but it was felt that analysis of the data would allow the agency to identify common problems or trends. NRC publication of the data received from licensees and from the regional offices was made on a monthly basis in a document that was referred to as the Gray Book (USNRC, NUREG-0020, "Licensed Operating Reactors: Status Summary Report"). It rapidly became an authoritative source on the performance of nuclear power plants. Computerization of the data allowed searches that enabled the NRC staff to obtain information on which systems and components were involved in causing automatic scrams and what corrective actions were taken. Other uses included attempting to analyze what factors impacted on plant performance. The data was also used by members of the nuclear industry and other interested parties. Other objectives included being able to compare nuclear plant performance with fossil plant performance utilizing the same definitions of capacity factor and forced outage rate, etc.

The current purpose is similar to the original purpose, but there are alternate sources for some of the information, such as 10 CFR 50.72 and 50.73 reports for scrams and information on the systems and components involved in scrams. However, the bulk of the information included in the MOR is not duplicated in other reports required by the NRC.

4. Organizations receiving the report

NRR, AEOD, Regions, ACRS, PDR and LPDRs, and IRM receive the report (RIDS distribution code: IE24D). NRC contractors such as INEL (EG&G) and Oak Ridge get the MORs as well as monthly diskettes including MOR data for all units. These diskettes have been issued by IRM covering data since January 1, 1990.

Other NRC organizations get just the monthly diskettes. The data is also entered into major NRC databases such as the Shared Information Network (SINET) and EXSIS on a monthly basis.

5. Organizations using the reports

NRR/Project Managers use the MORs for general information.

IRM uses the monthly reports to provide information to a variety of users. IRM has INEL preparing monthly diskettes and one annual report. The diskettes are distributed to many NRC offices and are also sent to licensees. Other non-NRC users can obtain a subscription for the diskettes from the Government Printing Office. IRM also makes the MORs available to DOE for use in the Waste Fund program. As indicated earlier, the data is also entered into SINET and EXSIS.

In response to a Commission directive to develop the Performance Indicator (PI) program, AEOD uses data that is reported solely in the licensee MORs to develop PIs. The data is needed to develop these meaningful and consistent measures of plant performance and their inherent safety relationships.

6. Plant specific/generic actions taken upon receiving the report

IRM does not issue any of the subject actions. AEOD has not taken any plant specific or generic actions directly upon receiving the report.

7. Identify routine analyses/staff reports generated based on the report received

IRM issues the compilation of MORs on diskette and publishes the December data in hard copy because it contains calendar year data.

NRR/Projects may use the MOR information directly for performance evaluation (Senior Management Meeting discussion, SALP preparation), but the information is usually obtained indirectly through the PI Reports.

AEOD uses data that is reported solely in the MORs to develop PIs. Of the present eight PIs, two depend on the data reported in the MORs. This data includes the number of reactor critical hours for the

equipment forced outage indicator; the forced outage hours for the equipment forced outage and forced outage rate indicators; and the outage type, whether forced or scheduled, for the forced outage rate and equipment forced outage indicators. Presently, these indicators are published formally once every quarter as the PI report (USNRC, Office for Analysis and Evaluation of Operational Data, "Performance Indicators for Operating Commercial Nuclear Power Reactors").

8. Resources (staff hours/contract dollars) expended per report

NRR/Projects expends about one hour per report.

IRM contractors spend about $60,000 a year maintaining a database and issuing diskettes. IRM enters the data into SINET and EXSIS utilizing about 0.1 FTE.

9. Identify similar/related reporting requirements

While 10 CFR Part 50.72 and 50.73 are similar for the items discussed under section 3 above, the bulk of the information included in the MOR is not duplicated in other reports required by the NRC.

10. Discuss the potential reduction in public health and safety that would result if the reporting requirement was eliminated.

Part of the NRC's mission is to provide information to the public about the performance of nuclear power plants. The MORs, the diskettes, and printed reports meet part of that mission.

Elimination of the requirement to provide the data in MORs would eliminate two of the present eight PIs that were approved by the Commission. This would eliminate two meaningful and consistent measures of plant performance and their inherent safety relationships. Elimination of the MOR requirement would therefore require the consent of the Commission.

11. Discuss and justify proposed modifications to the reporting requirement that could reduce impact while at the same time continue to meet the safety objective; note differing views of other users; conversely justify retaining the reporting requirement, without modification

Since IRM is not really a user of the MOR data no proposals on modifications are made. IRM feels that the public information aspect of the MOR justifies its retention.

Performance Indicator data is one of the fundamental tools used on a continuing basis by AEOD in our independent analysis of nuclear power plant safety performance trends. The results of such analyses are necessary for our support of various NRC tasks, such as input to the semi-annual Senior Management Meeting plant selection process.

Presently, PIs are published formally once every quarter, thus making it appear that the data is needed only quarterly. Therefore, it may appear that the operating report frequency could be changed from monthly to quarterly. However, this is not the case.

PIs are constantly updated to reflect the latest performance trends. Thus, decreasing the frequency of reporting to quarterly would greatly hinder the fulfillment of our mission, since the most current data used in developing our concerns may be as much as 6 months old. Additionally, modifications to the analysis methods used in determining the PIs are being considered by the Commission for adoption (see SECY-92-425). These modifications change the analysis from a quarterly-based system to one that is based on actual operating cycles. Accurate and continuous monthly updates of plant operational data are critical for the success of these enhanced PIs.

12. NRC resource or cost savings based on modifying the requirement

A modest reduction in contractor resources would result if reporting frequency was changed from monthly to quarterly, and a further reduction would result if the data was electronically submitted. Data quality assurance checks and reviews would remain at about the same level. AEOD is working with IRM to eliminate delays in receiving reports by making electronic data interchange the preferred method of submittal.

13. Management recommendations

IRM recommends not changing reporting frequency since that would limit the usefulness of the information to many users and would not result in a significant resource or cost saving.

AEOD also recommends not changing the reporting frequency for licensee MORs since a reduced frequency would limit the usefulness of the information to AEOD and would not result in a significant resource or cost saving. AEOD continues to need the reactor critical hours and outage data in the MOR in its present form and frequency.

Because of our reliance on and requirement for accurate monthly operating history information, we strongly recommend not changing the frequency of the MORs to quarterly. In fact, our need for this information is so critical that we are experiencing difficulties in timely analysis due to the inherent slowness in the present reporting method. By the time the licensee reports are received through the mail by us and are available in database format, nearly 2 months have passed. We are working with Information Resource Management (IRM) to eliminate much of this delay by making electronic data interchange (EDI) of this information the preferred method of submittal.

D Morrell Date: 3/31/93
Division Director

Division/Office: DSP/AEOD

ADDITIONAL TASK FORCE COMMENTS

The task force to review the reporting requirements for power reactor licensees has the following additional comments to make concerning the recommendations of the line organization that prepared the User Need Statement for the subject reporting requirement:

SUBJECT: Technical Specification 6.9.1.5 - Monthly Operating Reports

ORGANIZATION: Division of Safety Programs, AEOD

1. The Division of Safety Programs (DSP) notes in the User Need Statement that information reported in the Monthly Operating Reports (MORs) is used to develop 2 of the 8 Performance Indicators for commercial nuclear power reactors. DSP further notes that this information is currently only available through the MORs. As a result, the task force agrees that the MORs should be retained. However, since no safety argument has been presented to justify continuing to receive and compile all of the information now provided, the information reported in the MORs should be reduced to that which is needed to support the Performance Indicator program. This could be implemented by a line-item improvement to the new Standard Technical Specifications and a generic letter, allowing licensees to adopt the technical specification change through the license amendment process.

ACTION - Russell, NRR

Cys: Taylor
Milhoan
Thompson
Blaha
Beckjord, RES
Bernero, NMSS
Jordan, AEOD
BGrimes, NRR
JShapaker, NRR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICE OF THE
SECRETARY

April 26, 1994

MEMORANDUM TO: James M. Taylor
Executive Director for Operations

FROM: John C. Hoyle, Assistant Secretary

SUBJECT: SECY-94-093 - NRC STAFF ASSESSMENT OF REPORTING REQUIREMENTS FOR POWER REACTOR LICENSEES

This is to advise you that the Commission has not objected to:

1) the staff proceeding to assess the reporting requirements for power reactor licensees and initiating rulemaking or other appropriate actions consistent with the recommendations in SECY-94-003,

2) initiation of a combined rulemaking and appropriate generic communications based on the recommendations of the Regulatory Review Group and the Reporting Requirements Task Force, and

3) the staff plans to investigate the efficacy of applying electronic transmission techniques for data, reports, and test results in conjunction with the development of the information technology plan for the agency.

The staff should remain aware that there is more to be considered than the burden on licensees and the NRC's need to have the information in deciding to eliminate a reporting requirement. Each time the NRC decides that a report no longer must be submitted, it reduces the amount of information to which the public has access. This is particularly important if it is decided that the licensee must have the information available for review on-site, but is no longer required to submit the information.

SECY NOTE: THIS SRM AND SECY-94-093 WILL BE MADE PUBLICLY AVAILABLE 10 WORKING DAYS FROM THE DATE OF THIS SRM

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ATTACHMENT 7

The staff should consider the public's need for the information in assessing the body of reporting requirements. In cases where the staff concludes that the reporting requirements being eliminated will significantly affect the ability of the public to participate in the regulatory process, the staff should provide the results of their assessment and their recommendations to the Commission prior to initiating action to eliminate any reporting requirements.

cc: The Chairman
Commissioner Rogers
Commissioner Remick
Commissioner de Planque
OGC
OCA
OIG
Office Directors, Regions, ACRS, ACNW, ASLBP (via E-Mail)

POLICY ISSUE
(Information)

January 7, 1994 SECY-94-003

FOR: The Commissioners

FROM: James M. Taylor
Executive Director for Operations

SUBJECT: PLAN FOR IMPLEMENTING REGULATORY REVIEW GROUP RECOMMENDATIONS

PURPOSE:

To submit the staff's implementation plan for the Regulatory Review Group recommendations described in the final report.

BACKGROUND:

On January 4, 1993, the Executive Director for Operations established the Regulatory Review Group (RRG). The RRG conducted a disciplined review of power reactor regulations and related processes, programs, and practices, placing special attention on the potential for using performance-based requirements and guidance in place of prescriptive requirements and guidance. The RRG reviewed the regulations of 10 CFR Part 50 affecting operating reactors, the contents of four power reactor licenses, regulatory guidance supporting selected technical areas, public comments related to the Marginal-to-Safety Program, the 1992 review by the Committee to Review Generic Requirements, and recent, related industry correspondence.

In August 1993, the RRG issued its final report containing recommendations aimed at reducing the regulatory burden on power reactor licensees and strengthening NRC administrative practices. The RRG report discussed several key areas in which changes in the way NRC conducts business could

CONTACT:
Roy Zimmerman, EDO
504-2969

NOTE: TO BE MADE PUBLICLY AVAILABLE IN 10 WORKING DAYS FROM THE DATE OF THIS PAPER

ATTACHMENT 5

9401130232-XA

significantly reduce industry and NRC staff costs without adversely affecting the level of safety at operating plants. For example, the RRG suggested using more performance-based and risk-based approaches in such areas as quality assurance, security, fire protection, and inservice inspection and testing. Additionally, the RRG examined agency administrative practices and proposed possible efficiencies in the areas of commitment management, reporting requirements, and rulemaking practices.

DISCUSSION:

The staff has prepared an implementation plan for the RRG recommendations. This plan (see Enclosure 1) contains general implementation strategies, priorities, major milestones and target schedules for the timely resolution of each RRG recommendation. The activities associated with the development of the implementation plan resulted in some instances in which the planned actions differ from those recommended by the RRG. In each of these cases, the merits of the RRG recommendation were carefully considered.

In completing the RRG effort and preparing the implementation plan, the staff identified several key areas in which substantive burden could be reduced for licensees, staff, or both, without adversely impacting safety at currently operating plants. These areas include: enhancing and expanding the uses of probabilistic risk assessments to improve the regulation of operating reactors, revising existing quality assurance program guidance to encourage a more graded approach, and revising existing prescriptive regulations in security and fire protection to be more performance-based. Staff and industry initiatives in these and other burden-reducing areas (such as cost-beneficial licensing actions, developing a risk-based approach to inservice inspection and testing, and rulemaking considerations in the security, fitness-for-duty, and containment testing areas) are under way and can lead to significant improvements in our regulation of the nuclear industry without adversely affecting plant safety.

The staff constructed the implementation plan by dividing the RRG recommendations into specific topic areas such as quality assurance and security. Each topic area of the implementation plan contains: (1) the specific issues (the numbers beneath each issue correspond to the appropriate sections in the RRG report), (2) the RRG recommendations for each issue, (3) an action plan for implementing individual RRG recommendations, (4) the priority assigned by the task group, based primarily on burden reduction, (5) the lead office for the resolution of each RRG recommendation, and (6) the targeted completion dates for each item, recognizing that the staff is still reviewing integrated resource loading.

Although not specifically stated in the action plan, completion of a number of the items will necessitate training of headquarters and regional staff, and will require ongoing dialogue with industry in order to achieve a smooth transition from action plan to actual practice.

The NRC "Principles of Good Regulation" are the foundation for many of the specific recommendations of the RRG and the enclosed implementation plan. The plan, including the completion schedule, has been endorsed by the regional administrators and appropriate office directors. The staff is implementing the agreed upon actions. I intend to monitor the steady progress toward completion of the implementation plan by receiving periodic updates from the office directors and will act to ensure that the action plan is implemented.

James M. Taylor, Executive Director
for Operations

Enclosure:
RRG Implementation Plan

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ACRS
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TOPIC AREA	ISSUE	RRG RECOMMENDATION	ACTION PLAN	PRI	LEAD OFFICE	TARGET SCHEDULE
56	Allow line item improvements for Improved Standard Technical Specifications 3.3.4j	Permit line-item improvements in accordance with the Technical Specifications improvement policy for all individual licensees in addition to lead plant licensees	Policy Statement on Technical Specifications dated 7/22/93 stated line item improvements would be accepted by NRC	NA		COMPLETE
57	Delete unnecessary reporting requirements 2.3.16c	License amendments to delete reporting requirements for reports that are "not required" in the new Standard Technical Specifications licenses should be acted upon by the staff	Policy Statement on technical specifications allows line item improvements (see item # 56)	NA	NA	COMPLETE
58	Revise Regulatory Guide 1.16 2.3.15c 2.3.16 2.3.18	Revise Regulatory Guide 1.16, monthly operating report, to eliminate unnecessary reporting requirements	1. Revise and publish draft regulatory guide 1.16 to reduce scope of monthly operating report accordingly (see item # 59) 2. Publish final regulatory guide	2	RES	6/94 1/95
59	Evaluate need or frequency for all reporting requirements contained in regulations, technical specifications or industry codes and standards 2.3.16d 2.3.16e 2.3.16f	The RRG report recommends a major staff effort to review all technical specification reporting requirements for special reports, situational reports, routine or periodic reports and reports required by regulations.	1. Provide draft rule changes to the Commission on items decided by RRG and Reporting Requirements Task Force that can be eliminated 2. Publish final rule changes to eliminate requirements identified in item 1 3. Assess additional reporting requirements identified in public comments to determine whether they can be eliminated 4. Publish draft rule changes to eliminate requirements from item 2 5. Publish final rule changes	2	RES NRR RES	9/94 2/95 12/95 6/96 12/96

SEE TA #15

U.S. NUCLEAR REGULATORY COMMISSION

Revision 4
August 1975

REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

REGULATORY GUIDE 1.16

REPORTING OF OPERATING INFORMATION—APPENDIX A TECHNICAL SPECIFICATIONS

A. INTRODUCTION

Section 50.36, "Technical Specifications," of 10 CFR Part 50, "Licensing of Production and Utilization Facilities," requires that each applicant for a license authorizing operation of a nuclear power plant include in its application proposed technical specifications. These technical specifications, as issued by the NRC, are incorporated into the facility license and are conditions of the license. Technical specifications are now included as two appendices to the license: Appendix A technical specifications relate to health and safety, and Appendix B technical specifications relate to environmental impact.[1] Each of these appendices includes a section on reporting requirements. The reporting program described in this regulatory guide involves the reporting requirements of Appendix A technical specifications only. In some cases, this program may need to be supplemented or modified because of unique plant design features or other factors. The need for a supplemental or modified program will be determined on a case-by-case basis.

Reporting of information concerning radioactive discharges, radiological environmental monitoring, and nonradiological environmental surveillance and environmental impact is discussed in Regulatory Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants."

In addition to the reporting requirements necessary for compliance with technical specifications, specific reporting requirements are included in Part 50, as well as in other Parts of Title 10, Chapter I, Code of Federal Regulations. A compilation of all reporting requirements applicable to the various types of NRC licensees, including identification of the proper NRC addressee or addressees and designation of the number of copies required, is included in Regulatory Guide 10.1, "Compilation of Reporting Requirements for Persons Subject to NRC Regulations," and is not presented here.

B. DISCUSSION

In September 1974 the Atomic Energy Commission[2] Regulatory Staff published Revision 2 of Regulatory Guide 1.16. This revision reflected results of a staff review of operating information needed to permit assessment by the Commission of safety-related activities during the operating phase of plant life. Significant changes in Revision 2 were:

1. Reporting requirements were updated to reflect changes in reports required by Appendix A technical specifications. In general, these changes involved:
   a. a change in frequency of submittal of routine operating reports;
   b. elimination of the first-year operating report;
   c. formalization of reporting of operating information on a monthly frequency;
   d. deletion of certain items of information no longer required to be submitted on a routine basis;
   e. changes in the format and immediacy of reporting required for certain types of abnormal occurrences (now called reportable occurrences); and
   f. improved guidance concerning definitions and categories of significance of abnormal occurrences.
2. Appendices were added to provide the desired format for radiation exposure reports and monthly operating reports.
3. A listing of reports other than those required by Appendix A technical specifications was eliminated. (See Introduction above.)

[1] A few facilities have a single appendix that contains the combined aspect of Appendices A and B.

[2] The Atomic Energy Commission was abolished by the Energy Reorganization Act of 1974, which also created the Nuclear Regulatory Commission and gave it the licensing and related regulatory functions of the AEC.

Comments were invited within 60 days of publication of Revision 2 for use in conjunction with early revision of the guide. As a result of comments received on the guide and additional staff review, the staff developed Revision 3. Significant changes in Revision 3 were:

1. The startup report was revised to be more specific as to the test results to be reported.
2. The annual report section was revised to (1) further quantify the term "reduction in power," (2) provide further guidance on reporting of occupational radiation exposures, and (3) revise the information to be submitted on fuel performance.
3. The abnormal occurrence report section was revised to (1) provide for prompt notification by telephone and confirmation of such notification by telegraph, mailgram, or facsimile transmission of the types of abnormal occurrences listed under Section 2.a, (2) be more specific on the types of abnormal occurrences reported, (3) delete radiological effluent releases from Appendix A technical specification reporting requirements, (4) provide for reporting of the types of abnormal occurrences listed under Section 2.b within 30 days of occurrence of the event, and (5) make Section 2.c of Revision 2 of the guide a separate section (Section 4).

* In previous revisions of Regulatory Guide 1.16, the term "abnormal occurrence" was used to designate any unscheduled or unanticipated operational event reported to the Commission. Included in these reported events were (1) events that could or did have significance from the standpoint of public health or safety and (2) events reported to NRC for performance evaluation and trend determinations. In Section 208 of the Energy Reorganization Act of 1974 (Pub. L. 93-438), an "abnormal occurrence" is defined for the purposes of the reporting requirements of the Act as an unscheduled incident or event which the Commission determines is significant from the standpoint of public health or safety. In order to be consistent with this definition, the events designated in previous revisions of this guide as "abnormal occurrences" are designated "reportable occurrences" in Revision 4. Any "reportable occurrences" that are determined by the Commission to be significant from the standpoint of public health or safety will be further designated "abnormal occurrences."

C. REGULATORY POSITION

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following program for reporting of operating information provides an acceptable basis to the NRC staff for meeting the reporting requirements of Appendix A technical specifications. Reports submitted in accordance with this guide should be addressed to the Director of the appropriate NRC Regional Office unless otherwise noted.

*Lines indicate substantive changes from previous issue.

1. Routine Reports

a. Startup Report.

A summary report of plant startup and power escalation testing should be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant. The report should address each of the tests identified in the FSAR and should in general include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation should also be described. Additional specific details may be included in license conditions based on the applicant's commitment to applicable regulatory guides and should be included in this report.

Startup reports should be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports should be submitted at least every three months until all three events have been completed.

b. Annual Operating Report.[3]

Routine operating reports covering the operation of the unit during the previous calendar year should be submitted prior to March 1 of each year. The initial report should be submitted prior to March 1 of the year following initial criticality.

The primary purpose of annual operating reports is to permit annual evaluation by the NRC staff of operating and maintenance experience throughout the nuclear power industry. The annual operating reports made by licensees should provide a comprehensive summary of the operating experience gained during the year, even though some repetition of previously reported information may be involved. References in the annual operating report to previously submitted reports should be clear.

Each annual operating report should include:

(1) A narrative summary of operating experience during the report period relating to safe operation of the facility, including safety-related maintenance not covered in item 1.b.(2)(e) below.

[3] A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.

(2) For each outage or forced reduction in power[4] of over 20 percent of design power level where the reduction extends for more than four hours:

(a) the proximate cause and the system and major component involved (if the outage or forced reduction in power involved equipment malfunction);

(b) a brief discussion of (or reference to reports of) any reportable occurrences pertaining to the outage or power reduction;

(c) corrective action taken to reduce the probability of recurrence, if appropriate;

(d) operating time lost as a result of the outage or power reduction (for scheduled or forced outages,[5] use the generator-off-line hours; for forced reductions in power, use the approximate duration of operation at reduced power);

(e) a description of major safety-related corrective maintenance performed during the outage or power reduction, including the system and component involved and identification of the critical path activity dictating the length of the outage or power reduction; and

(f) a report of any single release of radioactivity or single radiation exposure specifically associated with the outage which accounts for more than 10 percent of the allowable annual values.

(3) A tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions,[6] e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20 percent of the individual total dose need not be accounted for. In the aggregate, at least 80 percent of the total whole body dose received from external sources should be assigned to specific major work functions. See Appendix A to this guide for a standard format for providing this information.

(4) Indications of failed fuel resulting from irradiated fuel examinations, including eddy current tests, ultrasonic tests, or visual examinations completed during the report period.

c. **Monthly Operating Report.**

Routine reports of operating statistics and shutdown experience should be submitted on a monthly basis. The report formats set forth in Appendices B, C, and D to this guide should be completed in accordance with the instructions provided. The completed forms should be submitted by the tenth of the month following the calendar month covered by the report to the Director, Office of Management Information and Program Control, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, with a copy to the appropriate NRC Regional Office.

2 Reportable Occurrences

Guidance concerning reportable occurrences that should be reported in different time frames is provided below. Supplemental reports may be required to fully describe final resolution of the occurrence. In cases of corrected or supplemental reports, a licensee event report should be completed and reference should be made to the original report date.

a. **Prompt Notification With Written Followup.**

The types of events listed below should be reported as expeditiously as possible, but within 24 hours by telephone and confirmed by telegraph, mailgram, or facsimile transmission to the Director of the appropriate NRC Regional Office, or his designee, no later than the first working day following the event, with a written followup report within two weeks. A copy of the confirmation and the written followup report should also be sent to the Director, Office of Management Information and Program Control, USNRC. The written followup report should include, as a minimum, a completed copy of the licensee event report form (see Appendix E to this guide) used for entering data into the NRC's computer-based file of information concerning licensee events. (Instructions for completing these licensee event report forms[7] are issued individually to each licensee.) Information provided on the licensee event report form should be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

(1) Failure of the reactor protection system or other systems subject to limiting safety-system settings to initiate the required protective function by the time a monitored parameter reaches the setpoint specified as the limiting safety-system setting in the technical specifi-

[4] The term "forced reduction in power" as used in this guide and as normally defined in the electric power industry means the occurrence of a component failure or other condition that requires that the load on the unit be reduced for corrective action immediately or up to and including the very next weekend. Note that routine preventive maintenance, surveillance, and calibration activities requiring power reductions are not covered by this section.

[5] The term "forced outage" as used in this guide and as normally defined in the electric power industry means the occurrence of a component failure or other condition that requires that the unit be removed from service for corrective action immediately or up to and including the very next weekend.

[6] This tabulation supplements the requirements of § 20.407 of 10 CFR Part 20.

[7] Instruction Manual, Licensee Event Report File, Office of Management Information and Program Control, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

cations or failure to complete the required protective function. The following are examples:[8]

(a) Reactor pressure exceeds limiting safety-system setting value without automatic trip.

(b) Inability to trip and insert sufficient control rods to achieve the technical specification shutdown margin.

(c) Failure of the reactor protective system to complete the required protective action once initiated.

Note: Instrument drift discovered as a result of testing need not be reported under this item but may be reportable under items 2.a(5),2.a(6), or 2.b(1) below.

(2) Operation of the unit or affected systems when any parameter or operation subject to a limiting condition for operation is less conservative than the least conservative aspect of the limiting condition for operation established in the technical specifications. The following are examples:

(a) Shutdown not begun within the specified time when unidentified reactor coolant leakage exceeds the technical specifications limit.

(b) Failure of a system other than the systems subject to limiting safety-system settings (see 2.a(1) above) to actuate, or actuation of such a system at a monitored parameter value less conservative than that listed in the technical specifications for the system.

(c) Operation with unacceptable containment leak rate type B or C test results.

(d) System cooldown at a rate exceeding the technical specifications limit.

Note: If specified action is taken when a system is found to be operating between the most conservative and the least conservative aspects of a limiting condition for operation listed in the technical specifications, the limiting condition for operation is not considered to have been violated and need not be reported under this item, but it may be reportable under item 2.b(2) below.

(3) Abnormal degradation discovered in fuel cladding, reactor coolant pressure boundary, or primary containment. The following are examples:

(a) Through-wall failure of piping or components of the reactor coolant pressure boundary.

(b) Steam generator tube thinning in excess of acceptance limits in Regulatory Guide 1.83, "Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes."

(c) Welding or material defects greater than those allowable by applicable codes.

Note: Leakage of valve packing or gaskets within the limits for identified leakage set forth in technical specifications need not be reported under this item.

(4) Reactivity anomalies involving disagreement with the predicted value of reactivity balance under steady-state conditions during power operation greater than or equal to 1% $\Delta k/k$; a calculated reactivity balance indicating a shutdown margin less conservative than specified in the technical specifications; short-term reactivity increases that correspond to a reactor period of less than 5 seconds or, if subcritical, an unplanned reactivity insertion of more than 0.5% $\Delta k/k$; or occurrence of any unplanned criticality.

(5) Failure or malfunction of one or more components which prevents or could prevent, by itself, the fulfillment of the functional requirements of system(s) used to cope with accidents analyzed in the SAR. The following are examples:

(a) Clogged fuel line(s) resulting in failure to supply fuel to the emergency generators.

(b) Multiple instrument drift resulting in loss of protective function.

(c) HPCI failure to start or failure to continue running once initiated.

(6) Personnel error or procedural inadequacy which prevents or could prevent, by itself, the fulfillment of the functional requirements of systems required to cope with accidents analyzed in the SAR. The following are examples:

(a) Failure to restore a safety system to operability following test or maintenance.

(b) Improper procedure leading to incorrect valve lineup which resulted in closure of one manual valve in each of two redundant safety injection subsystems and would have prevented injection on demand.

Note: For items 2.a(5) and 2.a(6) reduced redundancy that does not result in loss of system function need not be reported under this section but may be reportable under items 2.b(2) and 2.b(3) below.

(7) Conditions arising from natural or man-made events that, as a direct result of the event, require plant shutdown, operation of safety systems, or other corrective measures required by technical specifications. The following are examples:

(a) Threatened civil disturbances requiring plant shutdown.

(b) Damage to the facility caused by fire, flood, earthquake, or other similar occurrences.

(8) Errors discovered in the transient or accident analyses or in the methods used for such analyses as described in the safety analysis report or in the bases for the technical specifications that have or could have permitted reactor operation in a manner less conservative than assumed in the analyses. The following are examples:

(a) Loss of condenser vacuum resulting in reactor pressure and flux transients that peak at values higher than analyzed.

[8]Examples are intended to be illustrative only.

(b) Reactivity insertion delay times by reactor protection system longer than those used in the technical specification bases.

(9) Performance of structures, systems, or components that requires remedial action or corrective measures to prevent operation in a manner less conservative than that assumed in the accident analyses in the safety analysis report or technical specifications bases; or discovery during plant life of conditions not specifically considered in the safety analysis report or technical specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition. The following are examples:

(a) Axial flux ratios less conservative than those for which correlations with overpower ΔI were based on core burnup projections.

(b) Failure of a safety injection pump to deliver the flow rates assumed in the FSAR.

(c) Degradation of hydraulic shock suppressors to the extent that they could not perform their required safety function.

(d) Failure of magnetic trip mechanisms on a safety-related circuit breaker to provide trip on instantaneous overcurrent as indicated on the manufacturer's time-current characteristic curve.

(e) Failure of a safety/relief valve to close after pressure has reduced below the required reseat valve.

(f) Thermal shock to the reactor coolant system resulting from inadvertent safety injection actuation.

Note: This item is intended to provide for reporting of potentially generic problems.

b. Thirty-Day Written Reports.

The reportable occurrences discussed below should be the subject of written reports to the Director of the appropriate NRC Regional Office within 30 days of occurrence of the event. A copy of the written report should also be sent to the Director, Office of Management Information and Program Control. The written report should include, as a minimum, a completed copy of the licensee event report form (see Appendix E to this guide) used for entering data into the NRC's computer-based file of information concerning licensee events. (Instructions for completing these licensee event report forms[7] are issued individually to each licensee.) Information provided on the licensee event report form should be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

(1) Reactor protection system or engineered safety feature instrument settings which are found to be less conservative than those established by the technical specifications but which do not prevent the fulfillment of the functional requirements of affected systems. The following are examples:

(a) One of the four scram dump volume level switches failed to operate during surveillance test.

(b) One of four reactor low-pressure switches operated at 885 psig instead of LSSS value of 900 psig.

(c) During test, one out of four undervoltage relays failed to perform its function of tripping a reactor trip breaker.

(2) Conditions leading to operation in a degraded mode permitted by a limiting condition for operation, or plant shutdown required by a limiting condition for operation. The following are examples:

(a) Core spray pump breaker tripped after 20 minutes during test. Trip unit was found to be defective, declared inoperable, and repaired.

(b) Safety injection pump failed to start following system initiation. Required surveillance on redundant components was successfully completed.

(c) One of the two centrifugal charging pumps became inoperable because of a faulty bearing. Redundant pump operability was confirmed.

Note: Routine surveillance testing, instrument calibration, or preventive maintenance which require system configurations as described in items 2.b(1) and 2.b(2) need not be reported except where test results themselves reveal a degraded mode as described above.

(3) Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems. The following are examples:

(a) One of the three diesel generators tripped from high temperature because cooling water valves were lined up incorrectly.

(b) Isolation valve for a low-pressure trip switch was found closed with system pressure locked in. Trip of switch would not occur at low pressure. Improper return to operation following maintenance was the cause.

(c) Failure to perform surveillance tests at the required frequency.

(4) Abnormal degradation of systems other than those specified in item 2.a(3) above designed to contain radioactive material resulting from the fission process. For example, a through-wall leak in a liquid waste storage tank.

Note: Sealed sources or calibration sources are not included under this item. Leakage of valve packing or gaskets within the limits for identified leakage set forth in technical specifications need not be reported under this item.

3. Unique Reporting Requirements

The above reporting program will in general satisfy the reporting requirements necessary for compliance with Appendix A technical specifications. This program may need to be supplemented or modified because of unique plant design features or other factors. The need for a supplemental or modified program will be determined on a case-by-case basis and so designated in individual operating licenses.

4. Events of Potential Public Interest

The types of events listed below are frequently of high public interest. While some of the events may not be reportable by regulation or defined in other parts of this guide, the Director of the appropriate NRC Regional Office, or his designee, should be informed of such events by telephone as soon as possible after the event has been discovered.

a. An event that causes damage to property or equipment when such damage affects the power production capability of the facility.

b. Radiation exposure to licensee personnel or members of the public in excess of applicable exposure limits set forth in 10 CFR Part 20.

c. Natural or man-made conditions that may require action which need not be reported under item 2.a(7) above.

d. Discovery of significant radiological event offsite occurring during transport of material for which the licensee was either shipper or consignee.

e. Unscheduled shutdowns expected to last for more than one week, regardless of cause.

f. Unusual releases of radioactive material from the site boundary not reportable under other requirements.

g. Failure of or damage to safety-related equipment which need not be reported under item 2.a above, if the time for repair is likely to exceed the time allowed by the technical specifications.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for utilizing this regulatory guide.

Except in those cases in which the applicant proposes an acceptable alternative method, the reporting program described herein is being used by the NRC staff in order to standardize the reporting requirements section of Appendix A technical specifications of all operating licenses.

For licensees holding operating licenses without Appendix B environmental technical specifications, it may be necessary to include those reports identified in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants," and Regulatory Guide 4.1, "Programs for Monitoring Radioactivity in the Environs of Nuclear Power Plants," in the technical specifications under the unique reporting requirements section of the technical specifications.

APPENDIX A
STANDAPD FORMAT FOR REPORTING NUMBER OF PERSONNEL AND MAN-REM BY WORK AND JOB FUNCTION

Work & Job Function	Number of Personnel (> 100 mrem)			Total Man-Rem		
	Station Employees	Utility Employees	Contract Workers and Others	Station Employees	Utility Employees	Contract Workers and Others
Reactor Operations & Surveillance						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Routine Maintenance						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Inservice Inspection						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Special Maintenance						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Waste Processing						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Refueling						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
TOTAL						
Maintenance Personnel						
Operating Personnel						
Health Physics Personnel						
Supervisory Personnel						
Engineering Personnel						
Grand Total						

APPENDIX B
AVERAGE DAILY UNIT POWER LEVEL

DOCKET NO. _____
UNIT _____
DATE _____
COMPLETED BY _____
TELEPHONE _____

MONTH _____

DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)	DAY	AVERAGE DAILY POWER LEVEL (MWe-Net)
1		17	
2		18	
3		19	
4		20	
5		21	
6		22	
7		23	
8		24	
9		25	
10		26	
11		27	
12		28	
13		29	
14		30	
15		31	
16			

INSTRUCTIONS

On this form, list the average daily unit power level in MWe-Net for each day in the reporting month. Compute to the nearest whole megawatt.

These figures will be used to plot a graph for each reporting month. Note that when maximum dependable capacity is used for the net electrical rating of the unit, there may be occasions when the daily average power level exceeds the 100% line (or the restricted power level line). In such cases, the average daily unit power output sheet should be footnoted to explain the apparent anomaly.

APPENDIX C

OPERATING DATA REPORT

DOCKET NO. _____

UNIT _____

DATE _____

COMPLETED BY _____

TELEPHONE _____

OPERATING STATUS

1. REPORTING PERIOD: _____ GROSS HOURS IN REPORTING PERIOD: _____
2. CURRENTLY AUTHORIZED POWER LEVEL (MWt): _____ MAX. DEPEND. CAPACITY (MWe-Net): _____
   DESIGN ELECTRICAL RATING (MWe-Net): _____
3. POWER LEVEL TO WHICH RESTRICTED (IF ANY) (MWe-Net): _____
4. REASONS FOR RESTRICTION (IF ANY):

	THIS MONTH	YR TO DATE	CUMULATIVE
5. NUMBER OF HOURS REACTOR WAS CRITICAL			
6. REACTOR RESERVE SHUTDOWN HOURS			
7. HOURS GENERATOR ON LINE			
8. UNIT RESERVE SHUTDOWN HOURS			
9. GROSS THERMAL ENERGY GENERATED (MWH)			
10. GROSS ELECTRICAL ENERGY GENERATED (MWH)			
11. NET ELECTRICAL ENERGY GENERATED (MWH)			
12. REACTOR SERVICE FACTOR			
13. REACTOR AVAILABILITY FACTOR			
14. UNIT SERVICE FACTOR			
15. UNIT AVAILABILITY FACTOR			
16. UNIT CAPACITY FACTOR (Using MDC)			
17. UNIT CAPACITY FACTOR (Using Design MWe)			
18. UNIT FORCED OUTAGE RATE			

19. SHUTDOWNS SCHEDULED OVER NEXT 6 MONTHS (TYPE, DATE, AND DURATION OF EACH):

20. IF SHUT DOWN AT END OF REPORT PERIOD, ESTIMATED DATE OF STARTUP: _____

21. UNITS IN TEST STATUS (PRIOR TO COMMERCIAL OPERATION):

	FORECAST	ACHIEVED
INITIAL CRITICALITY		
INITIAL ELECTRICITY		
COMMERCIAL OPERATION		

INSTRUCTIONS FOR COMPLETING OPERATING DATA REPORT

This report should be furnished each month by licensees. The name and telephone number of the preparer should be provided in the designated spaces. The instructions below are provided to assist licensees in reporting the data consistently. The number of the instruction corresponds to the item number of the report form.

1. **Reporting Period**. Designate the month for which the data are presented. The **Gross Hours** are normally from 0001 of the first day through 2400 of the last day of the calendar month, with appropriate adjustments for any month in which a change from standard to daylight-saving time (or vice versa) is made. The only two shorter reporting periods are (1) the one in which the initial electrical generation occurs and (2) the one in which the reactor is shut down for decommissioning. In the former, the gross hours, expressed to the nearest tenth of an hour, are those from the time of initial power generation to 2400 of the last day of the calendar month. In the latter case, the gross hours, expressed to the nearest tenth of an hour, are those from 0001 of the calendar month to the specific time of final shutdown.

2. The **Authorized Power Level** is the maximum thermal power, expressed in megawatts, currently authorized by the Nuclear Regulatory Commission.

The net **Maximum Dependable Capacity** is the gross electrical output as measured at the output terminals of the turbine-generator during the most restrictive seasonal conditions less the normal station service loads.

The net **Design Electrical Rating** is the nominal net electrical output of the unit specified by the utility and used for the purpose of plant design.

3. Note that this item is applicable only if restrictions on the power level are in effect. Short-term (less than one month) limitations on power level need not be presented in this item, since one of the important purposes of the item is to determine if, and at what power level, a restricted power level line should be drawn on the chart of average daily reactor power.

Since this information is used to develop figures on capacity lost due to restrictions and because most users of the "Operating Plant Status Report" are primarily interested in energy actually fed to the distribution system, it is requested that this figure be expressed in MWe-Net in spite of the fact that the figure must be derived from MWt or percent power.

4. **Reasons for Restriction (if Any)**. If item 3 is used, item 4 explains why. Brief narrative is acceptable. Cite references as appropriate. Indicate whether restrictions are self-imposed or are regulatory requirements. Be as specific as possible within space limitations. Plants in startup and power ascension test phase should be identified here.

5. Show the total number of hours the reactor was critical during the gross hours of the reporting period.

6. **Reactor Reserve Shutdown Hours**. The total number of hours during the gross hours of reporting period that the reactor was removed from service for administrative or other reasons but was available for operation.

7. **Hours Generator On Line**. Also called Service Hours. The total number of hours during the gross hours of the reporting period that the unit operated with breakers closed to the station bus. These hours, plus those listed in Appendix D for the generator outage hours, should equal the gross hours in the reporting period.

8. **Unit Reserve Shutdown Hours**. The total number of hours during the gross hours of the reporting period that the unit was removed from service for economic or similar reasons but was available for operation.

9. **Gross Thermal Energy Generated**. The thermal output of the nuclear steam supply system during the gross hours of the reporting period, expressed in megawatt hours.

10. **Gross Electrical Energy Generated**. The electrical output of the unit measured at the output terminals of the turbine-generator during the gross hours of the reporting period, expressed in megawatt hours.

11. **Net Electrical Energy Generated**. The gross electrical output of the unit measured at the output terminals of the turbine-generator minus the normal station service loads during the gross hours of the reporting period, expressed in megawatt hours. Negative quantities should not be used. If there is no net positive value for the period, enter zero.

12-18. For units still in the startup and power ascension test phase, items 12-18 should *not* be computed. Instead, enter N/A in the current month column. These seven factors should be computed starting at the time the unit is declared to be in commercial operation. The cumulative figures in the second and third columns should be based on commercial operation as a starting date. However, units already in commercial operation, for which cumulative figures have been based on different starting dates, need not recalculate the cumulative figures.

12. **Reactor Service Factor**. Compute by dividing hours reactor was critical (item 5) by the gross hours in the reporting period (item 1). Express as percent to the nearest tenth of a percent. During months when the unit is shut down for the entire period because of nonreactor problems, enter "Not Applicable" and explain in the Summary of Appendix D. Do *not* include reserve shutdown hours in the calculation.

13. **Reactor Availability Factor**. Compute by dividing the reactor available hours (items 5 plus 6) by the gross hours in the reporting period (item 1). Express as percent to the nearest tenth of a percent.

14. **Unit Service Factor**. Compute by dividing hours the generator was on line (item 7) by the gross hours in the reporting period (item 1). Express as percent to the nearest tenth of a percent. Do *not* include reserve shutdown hours in the calculation.

15. **Unit Availability Factor**. Compute by dividing the unit available hours (item 7 plus item 8) by the gross hours in the reporting period (item 1). Express as percent to the nearest tenth of a percent.

16. **Unit Capacity Factor (Using MDC)**. Compute by dividing net electrical energy generated (item 11) by the product of maximum dependable capacity (item 2) times the gross hours in the reporting period (item 1). Express as percent to the nearest tenth of a percent.

17. **Unit Capacity Factor (Using Design Electrical Rating)**. Compute as in item 16, substituting design electrical rating for maximum dependable capacity.

18. **Unit Forced Outage Rate**. Compute by dividing the total forced outage hours (from the table in Appendix D) by the sum of hours generator on line (item 7) plus total forced outage hours (from the table in Appendix D). Express as percent to the nearest tenth of a percent.

19. **Shutdowns Scheduled to Begin in Next 6 Months**. Include type (refueling, maintenance, other), proposed date of start of shutdown, and proposed length of shutdown. It is recognized that shutdowns may be scheduled between reports and that this item may not be all inclusive. Be as accurate as possible as of the date the report is prepared.

20. Self-explanatory.

21. Self-explanatory. Note, however, that this information is requested for all units in startup and power ascension test status and is not required for units already in commercial operation.

Test Status is defined as that period following initial criticality during which the unit is tested at successively higher outputs, culminating with operation at full power for a sustained period and completion of warranty runs. Following this phase, the unit is generally considered by the utility to be available for commercial operation.

Date of **Commercial Operation** is defined as the date that the unit was declared by the utility owner to be available for the regular production of electricity, usually related to the satisfactory completion of qualification tests as specified in the purchase contract and to the accounting policies and practices of the utility.

APPENDIX D

UNIT SHUTDOWNS AND POWER REDUCTIONS

DOCKET NO. _____

UNIT NAME _____

DATE _____

COMPLETED BY _____

TELEPHONE _____

REPORT MONTH _____

NO.	DATE	TYPE F: FORCED S: SCHEDULED	DURATION (HOURS)	REASON (1)	METHOD OF SHUTTING DOWN THE REACTOR OR REDUCING POWER (2)	CORRECTIVE ACTIONS/COMMENTS
						(1) REASON A: EQUIPMENT FAILURE (EXPLAIN) B: MAINT. OR TEST C: REFUELING D: REGULATORY RESTRICTION E: OPERATOR TRAINING AND LICENSE EXAMINATION F: ADMINISTRATIVE G: OPERATIONAL ERROR (EXPLAIN) H: OTHER (EXPLAIN) (2) METHOD 1: MANUAL 2: MANUAL SCRAM 3: AUTOMATIC SCRAM 4: OTHER (EXPLAIN)

SUMMARY:

UNIT SHUTDOWNS AND POWER REDUCTIONS

INSTRUCTIONS

This report should describe all plant shutdowns during the report period. In addition, it should be the source of explanation of significant dips in average power levels (Appendix B). Each significant reduction in power level (greater than 20% reduction in average daily power level for the preceding 24 hours) should be noted, even though the unit may not have been shut down completely.[1] For such reductions in power level, the duration should be listed as zero, the method of reduction should be listed as 4 (Other), and the Comments column should explain. The Comments column should be used to provide any needed explanation not adequately described by the coded columns. Please do not add to the list of codes or legends now furnished. Similarly, do not add additional columns.

Number. This column should indicate the sequential number assigned to each shutdown or significant reduction in power for that calendar year. When a shutdown or significant power reduction begins in one report period and ends in another, an entry should be made for both report periods to be sure all shutdowns or significant power reductions are reported. Until a unit has achieved its first power generation, no number should be assigned to each entry.

Date. This column should indicate the date of the start of each shutdown or significant power reduction. Report as year, month, and day. August 14, 1975 would be reported as 750814. When a shutdown or significant power reduction begins in one report period and ends in another, an entry should be made for both report periods to be sure all shutdowns or significant power reductions are reported.

Type. Use "F" or "S" to indicate either "Forced" or "Scheduled," respectively, for each shutdown or significant power reduction. Forced shutdowns include those required to be initiated by no later than the weekend following discovery of an off-normal condition. It is recognized that some judgment is required in categorizing shutdowns in this way. In general, a forced shutdown is one that would not have been completed in the absence of the condition for which corrective action was taken.

Duration. Self explanatory. When a shutdown extends beyond the end of a report period, count only the time to the end of the report period and pick up the ensuing down time in the following report periods. Report duration of outages rounded to the nearest tenth of an hour to facilitate summation. The sum of the total outage hours plus the hours the generator was on line (item 7 of Appendix C) should equal the gross hours in the reporting period (item 1 of Appendix C).

Reason. Categorize by letter designation in accordance with the table appearing on the report form. If category H must be used, supply brief comments.

Method of Shutting Down the Reactor or Reducing Power. Categorize by number designation in accordance with the table appearing on the report form. If category 4 must be used, supply brief comments.

Corrective Actions/Comments. Use this column to amplify or explain the reasons for each shutdown or significant power reduction, with the corrective action taken, if appropriate. The Comments column entries should provide identification of each shutdown or significant power reduction that occurs as a direct result of a reportable occurrence on which a report has been or will be submitted. (This information may not be immediately evident for all such shutdowns, of course, since further investigation may be required to ascertain whether or not a reportable occurrence was involved.) When a direct correlation can be made between a given shutdown and a specific reportable occurrence report, the Comments column entry should state the reportable occurrence report number and date.

Summary. Write a brief summary description (3 to 4 sentences) of the highlights of operation of the unit for the reporting month. Include any comments required by item 12 of Appendix C.

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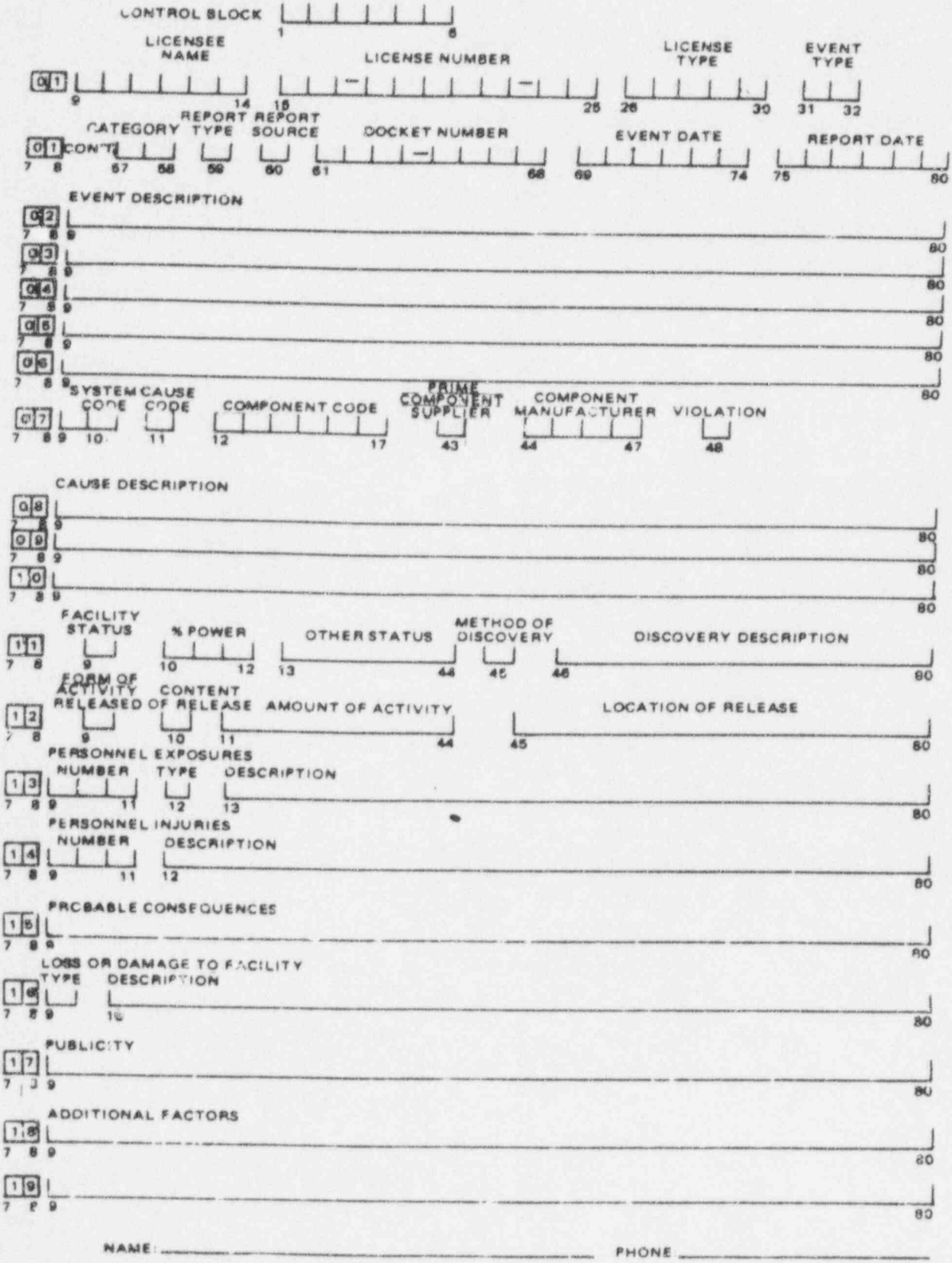
[1] Note that this differs from the Edison Electric Institute (EEI) definitions of "Forced Partial Outage" and "Scheduled Partial Outage." For these terms, EEI uses a change of 30 MW as the break point. For larger power reactors, 30 MW is too small a change to warrant explanation.

APPENDIX E
LICENSEE EVENT REPORT



NAME: _____ PHONE _____

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