

December 1983

12/8/83

TO REPRESENTATIVES OF THE UTILITIES ON THE ATTACHED LIST

Gentlemen:

SUBJECT: VOLUNTARY SURVEY OF LICENSED OPERATORS (Generic Letter No. 83-39)

The Nuclear Regulatory Commission has contracted with Battelle Pacific Northwest Laboratories and its Human Affairs Research Centers to undertake a mailed survey of selected licensed operations personnel at commercial operating nuclear power plants. This information collection request has been approved under OMB Clearance Number 3150-0102 which expires February 28, 1985.

The purpose of the survey is to provide information that will be useful in understanding current work and staffing practices in nuclear power plant operations. The survey focuses on work and shift scheduling, operations crew staff, and the shift technical advisor position. Participation in the survey is voluntary.

The survey will provide an opportunity for industry-wide input from licensee personnel on significant regulatory issues currently under consideration by the Commission. For example, responses to the survey will be considered in developing several recommendations, including a mechanism for operator-NRC communication and licensed operator crew composition (pursuant to NUREG-0660, NUREG-0737). Survey results will be reported in aggregate form to prevent the identification of individual respondents and specific utilities or plants.

Should you have any questions about the survey, please contact Dr. Mary V. McGuire at Battelle (206)525-3130, or Ms. Dolores Iorisseau at the NRC (301)492-4922.

Sincerely,

Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation

Enclosure: List of Utility Representatives Survey

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INFO-14R

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DATE	11/3/83	11/3/83	11/3/83	11/3/83	11/3/83	11/18/83	

Utilities being Asked to Participate in this Survey

Region I

GPU Nuclear Inc. ~~219~~ ~~284~~ 320  
Pennsylvania Power and Light Co. ~~323~~ —  
Vermont Yankee Nuclear Power Corp. ~~221~~

Region II

Alabama Power Co. ~~246~~ ~~244~~  
Carolina Power and Light Co. ~~244~~ ~~324~~ ~~225~~  
Florida Power Corp. ~~302~~  
Mississippi Power and Light Co. 416  
South Carolina Electric and Gas Co. 395

Region III

Commonwealth Edison ~~232~~ ~~249~~ ~~245~~ ~~341~~ ~~313~~ ~~324~~  
Consumers Power Co. ~~155~~ — ~~255~~  
Dairyland Power Cooperative 409  
Indiana and Michigan Electric Co. ~~315~~ ~~314~~  
Iowa Electric Light and Power Co. 331  
Northern States Power Co. ~~306~~ ~~282~~  
Toledo Edison Co. ~~346~~  
Wisconsin Electric Power Co. ~~250~~ ~~301~~  
Wisconsin Public Services Corp. ~~356~~

Region IV

Nebraska Public Power District ~~208~~  
Omaha Public Power District ~~285~~  
Arkansas Power and Light Co. ~~313~~ ~~268~~  
Public Service Company of Colorado ~~267~~

Region V

Portland General Electric Co. ~~311~~  
Sacramento Municipal Utility District ~~312~~  
Southern California Edison ~~206~~ ~~301~~ ~~362~~

Plant Survey Number \_\_\_\_\_

## SURVEY ON OPERATIONS CREW PRACTICES

### PART I. WORK AND SHIFT SCHEDULE:

This questionnaire contains items concerning several different issues. First, there are several questions about your work and shift schedule.

1. Please indicate what shift(s) you were working during your last full work week (without vacation or sick leave) by checking one box below.

☐ Day

☐ Swing

☐ Graveyard

☐ Other (e.g., combination, training, etc.). Please specify: \_\_\_\_\_

2. Please describe the operations shift crew that you worked with during your last full work week by completing the following table.

Job Title	Number in Shift Crew
Shift supervisor (person responsible for shift)	_____
Senior reactor operator (other than SS)	_____
Reactor operator	_____
Auxiliary or assistant operator	_____
Shift technical advisor	_____
Other (please specify):	
1. _____	_____
2. _____	_____
3. _____	_____
Total Number on Shift	=====

3. Please indicate how often you have worked overtime in your current job during the last year. (Check one box below.)

☐ Never

☐ Less than once a month

☐ About once a month

☐ Several times a month, but not every week

☐ At least once every week

4. When you work overtime, how much overtime do you typically work per day? (Please write in the number of hours below.)

\_\_\_\_\_ hours per day

5. The following is a list of situations in which you may be asked to work overtime. Please indicate your reasons for working overtime in each situation by checking the appropriate boxes below.

	Working overtime is voluntary under these conditions	Working overtime is required as part of the job	I never work overtime under these conditions
During normal operations to cover for staff absenteeism			
During normal operations due to regular shift rotation			
During normal operations to attend staff training			
During planned evolutions or outages (for example, refueling, scheduled maintenance)			
During unplanned abnormal conditions			
Other (please specify): _____ _____			

6. Please indicate the extent to which you agree or disagree with the following statements about shift work and overtime by circling the appropriate numbers below.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Moderately Disagree	Strongly Disagree
a. Shift rotation interferes with my personal and family life.	1	2	3	4	5	6	7
b. I like the days off I get from shift rotation.	1	2	3	4	5	6	7
c. I accept shift rotation as part of my job.	1	2	3	4	5	6	7
d. Rotating shifts should be changed to regular shifts.	1	2	3	4	5	6	7
e. I would prefer a 12-hour shift with a shorter work- week.	1	2	3	4	5	6	7
f. Overtime should be voluntary.	1	2	3	4	5	6	7
g. Working overtime some- times creates plant safety problems.	1	2	3	4	5	6	7
h. Overtime requirements interfere with my personal and family life.	1	2	3	4	5	6	7
i. I like the extra pay I get from working overtime.	1	2	3	4	5	6	7

7. In your opinion, after working four or more hours overtime, the time off before returning to work should be at least:

- ☐ 4 hours
- ☐ 8 hours
- ☐ 12 hours
- ☐ 16 hours
- ☐ 24 hours

8. In your opinion, what is the minimum operations shift crew necessary to operate your plant safely? What is the ideal operations shift crew? (Please indicate your opinions by completing the following table.)

Job Title	Minimum Number in Shift Crew	Ideal Number in Shift Crew
Shift supervisor (person responsible for shift)	_____	_____
Senior reactor operator (other than SS)	_____	_____
Reactor operator	_____	_____
Auxiliary or assistant operator	_____	_____
Shift technical advisor	_____	_____
Other (please specify):		
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
Total Number on Shift	=====	=====

PLEASE TURN TO PAGE 4

**PART II. THE SHIFT TECHNICAL ADVISOR:**

Next, there are several questions about the shift technical advisor position at your plant. Please note that these questions apply to the staff position performing the STA function (e.g., "STA," "Shift Engineer," etc.).

9. A list of activities that might be performed by an STA is shown below. Please look at each item on this list and circle the appropriate numbers to indicate whether the STA at your plant performs these activities while on STA duty.

	Performs During Normal Operations	Performs During Off-normal Operations	Never Performs	Don't Know
Monitors vital core parameters	1	2	3	4
Writes/reviews LERs	1	2	3	4
Reviews or develops changes in procedures	1	2	3	4
Performs accident analyses	1	2	3	4
Trains staff	1	2	3	4
Monitors operations for plant safety	1	2	3	4
Assists with shift turnover	1	2	3	4
Assumes responsibility for adherence to technical specs and procedures	1	2	3	4
Directs control room activities	1	2	3	4
Monitors safeguards equipment	1	2	3	4
Performs calculations (e.g., heat balance)	1	2	3	4
Directs preparation for maintenance	1	2	3	4
Maintains technical support center	1	2	3	4
Reviews or approves surveillance tests	1	2	3	4
Reduces paperwork load of shift supervisor	1	2	3	4
Approves tagging of safety-related equipment	1	2	3	4
Diagnoses abnormal conditions	1	2	3	4
Provides SS with overall perspective	1	2	3	4
Handles phone communication	1	2	3	4
Reads procedures	1	2	3	4
Performs reactor engineering functions and projects	1	2	3	4
Checks control panel indicators of plant condition	1	2	3	4
Reviews shift log books	1	2	3	4
Maintains awareness of plant status	1	2	3	4
Maintains shift activities log	1	2	3	4
Performs technical services department assignments	1	2	3	4
Studies for license	1	2	3	4
Reviews operating experience	1	2	3	4
Other (please specify):				
1. _____	1	2	3	4
2. _____	1	2	3	4
3. _____	1	2	3	4

10. How often did you discuss control room operations or status with the STA on duty during your last full work week?

- ☐ Never
- ☐ Once
- ☐ A few times during the week
- ☐ Every day
- ☐ Several times a day
- ☐ Almost constantly

11. Please list the topics you discussed most frequently with the STA during your last full work week:

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12. a. Approximately how many off-normal situations have you experienced when you were on shift in the past year? An off-normal situation is any unplanned transient. (Please write in the number of off-normal situations below.)

\_\_\_\_\_ Off-normal situations (If none, please skip to Question 13 on page 7.)

b. Did the operators request assistance in any of these off-normal situations?

- ☐ No
- ☐ Yes. If yes, in how many cases? \_\_\_\_\_

c. Please indicate who was called and the number of off-normal situations in which they were called for assistance in the past year when you were on shift by completing the table below.

Individual or Group Called	Number of Times Called
Operations Superintendent	_____
On-call Engineer	_____
Chemistry and Health Physics	_____
Shift Technical Advisor	_____
Quality Assurance or Control	_____
Instrumentation and Control	_____
Maintenance/Mechanical	_____
Maintenance/Electrical	_____
Training Department	_____
Plant Manager	_____
Other (please specify):	
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____

- d. Please describe the three most recent off-normal situations in which the shift technical advisor (STA) was called or participated when you were on shift. Indicate the type of assistance provided by checking the appropriate boxes below.

**CASE 1:**

Type of situation: \_\_\_\_\_

☐ STA was called                      ☐ STA participated without being called

Assistance provided by the STA (Check all that apply.)

☐ read procedures                      ☐ monitored vital core parameters                      ☐ wrote/reviewed LERs

☐ provided diagnostic assistance                      ☐ performed accident analysis                      ☐ Other: \_\_\_\_\_

☐ handled phone communication                      ☐ provided shift supervisor with overall perspective                      \_\_\_\_\_

How helpful was this assistance? (Check one.)

Very Helpful	Moderately Helpful	Slightly Helpful	Neither Helpful nor Unhelpful	Slightly Unhelpful	Moderately Unhelpful	Very Unhelpful
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**CASE 2:**

Type of situation: \_\_\_\_\_

☐ STA was called                      ☐ STA participated without being called

Assistance provided by the STA (Check all that apply.)

☐ read procedures                      ☐ monitored vital core parameters                      ☐ wrote/reviewed LERs

☐ provided diagnostic assistance                      ☐ performed accident analysis                      ☐ Other: \_\_\_\_\_

☐ handled phone communication                      ☐ provided shift supervisor with overall perspective                      \_\_\_\_\_

How helpful was this assistance? (Check one.)

Very Helpful	Moderately Helpful	Slightly Helpful	Neither Helpful nor Unhelpful	Slightly Unhelpful	Moderately Unhelpful	Very Unhelpful
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



**CASE 3:**

Type of situation: \_\_\_\_\_

☐ STA was called☐ STA participated without being called

Assistance provided by the STA (Check all that apply.)

☐ read procedures☐ monitored vital  
core parameters☐ wrote/reviewed LERs☐ provided diagnostic  
assistance☐ performed accident  
analysis☐ Other: \_\_\_\_\_☐ handled phone  
communication☐ provided shift  
supervisor with  
overall perspective

How helpful was this assistance? (Check one.)

Very  
HelpfulModerately  
HelpfulSlightly  
HelpfulNeither  
Helpful  
nor  
UnhelpfulSlightly  
UnhelpfulModerately  
UnhelpfulVery  
Unhelpful☐☐☐☐☐☐☐

13. Below are a number of statements about the actual use of the STA at your plant. Please indicate the extent to which you personally agree or disagree with each statement by circling the appropriate numbers.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Moderately Disagree	Strongly Disagree
a. The STA enhances effective plant operations.	1	2	3	4	5	6	7
b. The STA has too little authority during off-normal conditions.	1	2	3	4	5	6	7
c. The contributions of STAs have improved since the position was created.	1	2	3	4	5	6	7
d. The STA should be required to have an engineering degree.	1	2	3	4	5	6	7
e. The STA is an unnecessary position.	1	2	3	4	5	6	7
f. STAs should have more operations experience.	1	2	3	4	5	6	7
g. Under most abnormal conditions the STA contributes to plant safety.	1	2	3	4	5	6	7
h. The STA should have an SRO license.	1	2	3	4	5	6	7
i. The STA does not have enough to do during normal operations.	1	2	3	4	5	6	7
j. The overall benefits of the STA position justify the additional staffing costs.	1	2	3	4	5	6	7

**PART III. BACKGROUND:**

Next there are a number of questions about your work experience and education.

14. What is your current job title and department?

Title \_\_\_\_\_

Department \_\_\_\_\_

15. What is the title of the person to whom you report? That is, who is your main supervisor?

Title \_\_\_\_\_

Department \_\_\_\_\_

16. Do you belong to a union or collective bargaining unit?

☐ No

☐ Yes

17. Into what job(s) in your plant or utility could you move from your current position?

**Job Title**

**Department**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. How long have you worked in your present job?

\_\_\_\_\_ years      \_\_\_\_\_ months

19. What two jobs did you hold prior to this job? Please list your most recent job first.

	Title	Department	Type of Organization (Utility, Military, etc.)	Number of Years
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____

20. How long have you been with this utility?

\_\_\_\_\_ years      \_\_\_\_\_ months

21. How many years of experience do you have in nuclear operations?

Commercial (with this or other utilities) ..... \_\_\_\_\_ years

Nuclear Navy ..... \_\_\_\_\_ years

Other (please specify): \_\_\_\_\_  
..... .. \_\_\_\_\_ years

22. How many years of experience do you have in other modes of electricity production?

Fossil: \_\_\_\_\_ years

Hydro: \_\_\_\_\_ years

23. What is your educational background? (Please check the highest level of formal education you have completed.)

- ☐ GED
- ☐ High school graduate
- ☐ 1-2 years of college ..... Field: \_\_\_\_\_
- ☐ Associate degree ..... Field: \_\_\_\_\_
- ☐ 3-4 years of college ..... Field: \_\_\_\_\_
- ☐ Bachelors degree ..... Field: \_\_\_\_\_
- ☐ Some post-graduate education ..... Field: \_\_\_\_\_
- ☐ Masters degree ..... Field: \_\_\_\_\_
- ☐ Other (please specify): \_\_\_\_\_

24. What license(s) do you hold for your present station? (Check all that apply.)

- ☐ RO License (for \_\_\_\_\_ years)
- ☐ SRO License (for \_\_\_\_\_ years)
- ☐ Other (please specify): \_\_\_\_\_

25. What license(s), if any, have you held previously? (Check all that apply.)

- ☐ RO on BWR
- ☐ RO on PWR
- ☐ SRO on BWR
- ☐ SRO on PWR
- ☐ Other (please specify): \_\_\_\_\_

#### PART IV: SURVEY QUESTIONNAIRE:

Finally, these last questions ask about your opinion of this survey.

26. Several statements describing this questionnaire are listed below. Please indicate the extent to which you agree or disagree with each of these statements by circling the appropriate numbers.

	Strongly Agree	Moderately Agree	Slightly Agree	Neither Agree nor Disagree	Slightly Disagree	Moderately Disagree	Strongly Disagree
I feel that the questions adequately addressed the issue of:							
a. My work and shift schedule	1	2	3	4	5	6	7
b. The shift technical advisor	1	2	3	4	5	6	7
c. My background	1	2	3	4	5	6	7
This sort of questionnaire is a good way to obtain input from operations staff.	1	2	3	4	5	6	7

27. In your opinion, what would be the best ways of obtaining input from operations staff on issues of concern to the NRC? Please indicate your opinions by circling the appropriate numbers below.

	Very Good	Moderately Good	Slightly Good	Neither Good nor Poor	Slightly Poor	Moderately Poor	Very Poor
Written questionnaires or mailed survey	1	2	3	4	5	6	7
Personal interviews	1	2	3	4	5	6	7
Telephone interviews	1	2	3	4	5	6	7
Suggestion system or box	1	2	3	4	5	6	7
Small workshops	1	2	3	4	5	6	7
Conferences	1	2	3	4	5	6	7
Other (please specify):							
1. _____	1	2	3	4	5	6	7
2. _____	1	2	3	4	5	6	7

Please use the space below (or the following pages) for any additional comments.

THANK YOU VERY MUCH FOR YOUR TIME AND ASSISTANCE.  
PLEASE RETURN THIS QUESTIONNAIRE IN THE ATTACHED RETURN ENVELOPE TO:

Battelle Human Affairs Research Centers  
4000 N.E. 41st Street  
Seattle, WA 98105

If you have any questions about this survey, or if your return envelope is missing, please contact us at the above address or by telephone at (206) 525-3130, extension 475.