



50-3

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

December 9, 1977

Docket files

62-76-6

TO ALL PWR FACILITY LICENSEES

Gentlemen:

The NRC staff has recently been engaged in a series of discussions with reactor vendors, EPRI, and the Steam Generator Owners Groups concerning steam generator operational problems. Central to these discussions is an accurate assessment of operational conditions and experiences as well as the programs aimed towards the resolution of these problems.

In order to ensure that both the NRC and the nuclear industry have available a comprehensive collection of operating data for steam generators to permit informed, timely decisions and actions, DOR is establishing a steam generator information system. The system will collect appropriate information from all PWR licensees which will periodically be published. It is presently anticipated that the initial publication of information will be in the early part of 1978. You will be sent a copy of this and all future publications.

This information system will enable the NRC and each Licensee to draw from the operational experiences of the entire nuclear industry when making any decisions concerning steam generators. This should result in both safety and economic benefits.

Enclosed is a questionnaire which we request that you complete for each of your operating PWR units. We believe that the questionnaire is self explanatory, however, if questions arise or any clarifications are necessary, please do not hesitate to contact your NRC Project Manager. Please include with your response any diagrams you may have available which illustrate the tube plugging and/or the tube degradation patterns.

To enable us to maintain the information current, you are further requested to submit in the same format indicated by the questionnaire, any changes or additions to your initial submittal to reflect the future operating experience with your steam generators, i.e., the results of future steam generator inspections. The questionnaire should be completed to the extent applicable and appropriate at this time, i.e. regardless of operating experience.

MAN4
+

The information being requested is quite extensive and will require a diligent effort on your part and ours to assure accurate and timely completion. Also, we realize that parts of the information may already be available to the NRC, but not in a convenient format which is readily accessible. Therefore, we request that you assist us by returning a single completed copy of the enclosed questionnaire to the Director of Nuclear Reactor Regulation, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, within 60 days of receipt of this letter. Please include any comments or suggestions for improving this information system which you may have.

This request for generic information was approved by GAO under a blanket clearance number R0071; this clearance expires September 30, 1978.

Sincerely,

Karl R. Goller

Karl R. Goller, Assistant Director
for Operating Reactors
Division of Operating Reactors

Enclosure:
Steam Generator
Operating History
Questionnaire

cc w/enclosure:
See next page

Docket No. 50-313

Arkansas Power & Light Company
ATTN: Mr. William Cavanaugh, III
Executive Director
Generation and Construction
Department

P. O. Box 551
Little Rock, Arkansas 72203

cc: Phillip K. Lyon, Esquire
House, Holms & Jewell
1550 Tower Building
Little Rock, Arkansas 72201

Mr. Daniel H. Williams
Manager, Licensing
Arkansas Power & Light Company
Post Office Box 551
Little Rock, Arkansas 72203

Mr. John W. Anderson, Jr.
Plant Superintendent
Arkansas Nuclear One
Post Office Box 608
Russellville, Arkansas 72801

Arkansas Polytechnic College
Russellville, Arkansas 72801

Docket Nos. 50-317
and 50-318

Baltimore Gas and Electric Company
ATTN: Mr. A. E. Lundvall, Jr.
Vice President - Supply
P. O. Box 1475
Baltimore, Maryland 21203

cc: James A. Biddison, Jr.
General Counsel
G and E Building
Charles Center
Baltimore, Maryland 21203

George F. Trowbridge, Esquire
Shaw, Pittman, Potts and
Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Mr. R. C. L. Olson
Baltimore Gas and Electric Company
Room 922 - G and E Building
Post Office Box 1475
Baltimore, Maryland 21203

Mr. R. M. Douglass, Chief Engineer
Calvert Cliffs Nuclear Power Plant
Baltimore Gas and Electric Company
Lusby, Maryland 20657

Bechtel Power Corporation
ATTN: Mr. R. L. Ashley
Chief Nuclear Engineer
P. O. Box 607
Gaithersburg, Maryland 20760

Combustion Engineering, Inc.
ATTN: Mr. J. A. Honey
Project Manager
P. O. Box 500
Windsor, Connecticut 06095

Calvert County Library
Prince Frederick, Maryland 20678

Docket No. 50-261

Carolina Power & Light Company
ATTN: Mr. J. A. Jones
Senior Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

cc: Hartsville Memorial Library
Home and Fifth Avenue
Hartsville, South Carolina 29550

Docket No. 50-213

Connecticut Yankee Atomic Power Company
ATTN: Mr. Donald C. Switzer
President
Post Office Box 270
Hartford, Connecticut 06101

cc: Day, Berry, & Howard
Counselors at Law
One Constitution Plaza
Hartford, Connecticut 06103

Russell Library
119 Broad Street
Middletown, Connecticut 16457

Docket Nos. 50-3
and 50-241

Consolidated Edison Company
of New York, Inc.
ATTN: Mr. William J. Cahill, Jr.
Vice President
4 Irving Place
New York, New York 10003

cc: Leonard M. Trosten, Esquire
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N. W.
Washington, D. C. 20036

Paul S. Shemin, Esquire
Assistant Attorney General
State of New York
Department of Law
Two World Trade Center
New York, New York 10047

Sarah Chasis, Esquire
Natural Resources Defense
Council
122 East 42nd Street
New York, New York 10017

Director, Technical Development
Programs
State of New York Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

Anthony Z. Roisman, Esquire
Sheldon, Harmon & Roisman
1025 15th Street, N. W., 5th Floor
Washington, D. C. 20005

White Plains Public Library
100 Martine Avenue
White Plans, New York 10601

Docket No. 50-286

Consolidated Edison Company
of New York, Inc.

ATTN: Mr. William J. Cahill, Jr.
Vice President

4 Irving Place
New York, New York 10003

cc: Admiral Paul Early (IP-3)
Power Authority of the State
of New York
10 Columbus Circle
New York, New York 10019

White Plains Public Library
100 Martine Avenue
White Plains, New York 10601

Docket Nos. 50-295
and 50-304

Commonwealth Edison Company
ATTN: Mr. R. L. Bolger
Assistant Vice President
Post Office Box 767
Chicago, Illinois 60690

cc: Mr. John W. Rowe
Isham, Lincoln & Beale
Counselors at Law
One First National Plaza, 42nd Floor
Chicago, Illinois 60603

Robert J. Vollen, Esquire
109 North Dearborn Street
Chicago, Illinois 60602

Dr. Cecil Lue-Hing
Director of Research & Development
Metropolitan Sanitary District
of Greater Chicago
100 East Erie Street
Chicago, Illinois 60611

Waukegan Public Library
128 North County Street
Waukegan, Illinois 60085

Docket No. 50-255

Consumers Power Company
ATTN: Mr. Dave Bixel
Nuclear Licensing Administrator
212 West Michigan Avenue
Jackson, Michigan 49201

cc: M. I. Miller, Esquire
Isham, Lincoln & Beale
Suite 4200
One First National Plaza
Chicago, Illinois 60670

J. L. Bacon, Esquire
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Paul A. Perry, Secretary
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Kalamazoo Public Library
315 South Rose Street
Kalamazoo, Michigan 49006

Myron M. Cherry, Esquire
Suite 4501
One IBM Plaza
Chicago, Illinois 60611

Docket Nos. 50-269
50-270
and 50-287

Duke Power Company
ATTN: Mr. William O. Parker, Jr.
Vice President
Steam Production
Post Office Box 2178
422 South Church Street
Charlotte, North Carolina 28242

cc: Mr. William L. Porter
Duke Power Company
Post Office Box 2178
422 South Church Street
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esquire
DeBevoise & Liberman
700 Shoreham Building
806 - 15th Street, N. W.
Washington, D. C. 20005

Oconee County Library
201 South Spring Street
Walhalla, South Carolina 29691

Docket No. 50-334

Duquesne Light Company
ATTN: Mr. C. N. Dunn, Vice President
Operations Division
435 Sixth Avenue
Pittsburgh, Pennsylvania 15219

cc: Karin Carter, Esq.
Special Assistant Attorney General
Bureau of Administrative Enforcement
5th Floor, Executive House
Harrisburg, Pennsylvania 17120

Marvin Fein
Utility Counsel
City of Pittsburgh
313 City-County Building
Pittsburgh, Pennsylvania 15219

Mr. J. M. Cumiskey
Stone & Webster Engineering
Corporation
P. O. Box 2325
Boston, Massachusetts 02107

Mr. J. D. Woodward
R&D Center
Westinghouse Electric Corporation
Building 7-303
Pittsburgh, Pennsylvania 15230

Mr. Jack Carey
Technical Assistant
Duquesne Light Company
P. O. Box 4
Shippingport, Pennsylvania 15077

Mr. R. E. Martin
Duquesne Light Company
435 6th Avenue
Pittsburgh, Pennsylvania 15219

Beaver Area Memorial Library
100 College Avenue
Beaver, Pennsylvania 15009

Docket Nos. 50-250
and 50-251

Florida Power & Light Company
ATTN: Dr. Robert E. Uhrig
Vice President
P. O. Box 013100
Miami, Florida 33101

cc: Mr. Jack R. Newman, Esquire
Lowenstein, Newman, Reis & Axelrad
1025 Connecticut Avenue, N. W.
Suite 1214
Washington, D. C. 20036

Environmental & Urban Affairs Library
Florida International University
Miami, Florida 33199

Docket No. 50-335

Florida Power & Light Company
ATTN: Dr. Robert E. Uhrig
Vice President
Nuclear and General Engineering
Post Office Box 013100
Miami, Florida 33101

cc: Robert Lowenstein, Esquire
Lowenstein, Newman, Reis & Axelrad
1025 Connecticut Avenue, N. W.
Washington, D. C. 20036

Norman A. Coll, Esquire
McCarthy, Steel, Hector & Davis
14th Floor, First National Bank Building
Miami, Florida 33131

Indian River Junior College Library
3209 Virginia Avenue
Ft. Pierce, Florida 33450

Docket No. 50-302

Mr. W. P. Stewart
Director, Power Production
Florida Power Corporation
P. O. Box 14042, Mail Stop C-4
St. Petersburg, Florida 33733

cc: Mr. S. A. Brandimore
Vice President and General Counsel
P. O. Box 14042
St. Petersburg, Florida 33733

Crystal River Public Library
Crystal River, Florida 32629

Docket No. 50-315

Indiana & Michigan Electric Company
Indiana & Michigan Power Company
ATTN: Mr. John Tillinghast
Vice President
P. O. Box 18
Bowling Green Station
New York, New York 10004

cc: Mr. Robert Hunter
Vice President
American Electric Power Service
Corporation
2 Broadway
New York, New York 10004

Gerald Charnoff, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Donald Cook Nuclear Plant
ATTN: Mr. D. Shaller
Plant Manager
P. O. Box 458
Bridgman, Michigan 49106

Mr. David Dinsmore Comey
Executive Director
Citizens for a Better Environment
59 East Van Buren Street
Chicago, Illinois 60605

Maude Reston Palenske Memorial Library
500 Market Street
St. Joseph, Michigan 49085

Docket No. 50-289

Metropolitan Edison Company
ATTN: Mr. J. G. Herbein
Vice President
P. O. Box 542
Reading, Pennsylvania 19603

cc: GPU Service Corporation
Richard W. Heward, Project Manager
Mr. T. Gary Broughton, Safety and
Licensing Manager
260 Cherry Hill Road
Parsippany, New Jersey 07054

Pennsylvania Electric Company
Mr. R. W. Conrad
Vice President, Generation
1001 Broad Street
Johnstown, Pennsylvania 15907

Miss Mary V. Southard, Chairman
Citizens for a Safe Environment
P. O. Box 405
Harrisburg, Pennsylvania 17108

Government Publications Section
State Library of Pennsylvania
Box 1601 (Education Building)
Harrisburg, Pennsylvania 17126

Docket No. 50-336

Northeast Nuclear Energy Company
ATTN: Mr. D. C. Switzer
President
P. O. Box 270
Hartford, Connecticut 06101

cc: William H. Cuddy, Esquire
Day, Berry & Howard
Counselors at Law
One Constitution Plaza
Hartford, Connecticut 06103

Northeast Nuclear Energy Company
ATTN: Superintendent
Millstone Plant
P. O. Box 128
Waterford, Connecticut 06385

Waterford Public Library
Rope Ferry Road, Route 156
Waterford, Connecticut 06385

Docket Nos. 50-282
and 50-306

Northern States Power Company
ATTN: Mr. L. O. Mayer, Manager
Nuclear Support Services
414 Nicollet Mall - 8th Floor
Minneapolis, Minnesota 55401

cc: Gerald Charnoff, Esquire
Shaw, Pittman, Potts and
Trwobridge
1800 M Street, N. W.
Washington, D. C. 20036

Mr. F. P. Tierney
Plant Manager
Prairie Island Nuclear Generating Plant
Northern States Power Company
Route 2
Welch, Minnesota 55089

Sandra S. Gardebring
Executive Director
Minnesota Pollution Control Agency
1935 W. County Road B2
Roseville, Minnesota 55113

Jocelyn F. Olson, Esquire
Special Assistant Attorney General
Minnesota Pollution Control Agency
1935 West County Road B-2
Roseville, Minnesota 55113

Mr. Robert L. Nybo, Jr., Chairman
Minnesota-Wisconsin Boundary Area Commission
619 Second Street
Hudson, Wisconsin 54016

The Environmental Conservation Library
Minneapolis Public Library
300 Nicollet Mall
Minneapolis, Minnesota 55401

Docket No. 50-285

Omaha Public Power District
ATTN: Mr. Theodore E. Short
Division Manager - Production Operations
1623 Harney Street
Omaha, Nebraska 68102

cc: Margaret R. A. Pardis
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N. W.
Washington, D. C. 20036

Blair Public Library
1665 Lincoln Street
Blair, Nebraska 68008

Docket No. 50-344

Portland General Electric Company
ATTN: Mr. Charles Goodwin, Jr.
Assistant Vice President
621 SW Alder Street
Portland, Oregon 97205

cc: Mr. H. H. Phillips
Portland General Electric Company
621 Southwest Alder Street
Electric Building
Portland, Oregon 97205

Warren Hastings, Esquire
Phillips, Coughlin, Buell
Stoloff and Black
807 Electric Building
Portland, Oregon 97205

Mr. J. L. Frewing, Manager
Generation Licensing and Analysis
Portland General Electric Company
621 Southwest Alder Street
Portland, Oregon 97205

Columbia County Courthouse
Law Library, Circuit Court Room
St. Helens, Oregon 97051

Docket No. 50-272

Public Service Electric & Gas Company
ATTN: Mr. R. P. Librizzi
General Manager - Electric Production
Production Department
80 Park Place, Room 7221
Newark, New Jersey 07101

cc: Richard Fryling, Jr., Esquire
Assistant General Counsel
Public Service Electric & Gas Company
80 Park Place
Newark, New Jersey 07101

Troy B. Conner, Jr., Esquire
1747 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Gene Fisher
Bureau Chief
Bureau of Radiation Protection
380 Scotts Road
Trenton, New Jersey 08628

State House Annex
ATTN: Deputy Attorney General
State of New Jersey
36 West State Street
Trenton, New Jersey 08625

Attorney General
Department of Law & Public Safety
State House Annex
Trenton, New Jersey 08625

Public Service Electric & Gas Company
ATTN: Herbert J. Heller
Manager, Salem Nuclear Generating
Station
Hancocks Bridge, New Jersey 08038

Salem Free Library
112 West Broadway
Salem, New Jersey 08079

Public Service Electric & Gas Company
ATTN: R. L. Mittl
General Manager - Licensing
and Environment
80 Park Place
Newark, New Jersey 07101

Docket No. 50-244

Rochester Gas & Electric Corporation
ATTN: Mr. Leon D. White, Jr.
Vice President
Electric and Steam Production
89 East Avenue
Rochester, New York 14604

.cc: Lex K. Larson, Esquire
LeBoeuf, Lamb, Leiby & MacRae
1757 N Street, N. W.
Washington, D. C. 20036

Mr. Michael Slade
1250 Crown Point Drive
Webster, New York 14580

Rochester Committee for
Scientific Information
Robert E. Lee, Ph.D
Post Office Box 5236
River Campus Station
Rochester, New York 14627

Jeffrey Cohen
New York State Energy Office
Swan Street Building
Core 1, Second Floor
Empire State Plaza
Albany, New York 12223

Director, Technical Development Programs
State of New York Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

Rochester Public Library
115 South Avenue
Rochester, New York 14627

Docket No. 50-312

Sacramento Municipal Utility District

ATTN: Mr. J. J. Mattimoe
Assistant General Manager
and Chief Engineer

6201 S Street

P. O. Box 15830

Sacramento, California 95813

cc: David S. Kaplan, Secretary and
General Counsel

6201 S Street

P. O. Box 15830

Sacramento, California 95813

Business and Municipal Department

Sacramento City-County Library

828 I Street

Sacramento, California 95814

Docket No. 50-206

Southern California Edison Company

ATTN: Mr. James H. Drake

Vice President

2244 Walnut Grove Avenue

Post Office Box 800

Rosemead, California 91770

cc: Rollin E. Woodbury, Vice President
and General Counsel

Southern California Edison Company

Post Office Box 800

Rosemead, California 91770

Chickering & Gregory, General Counsel

ATTN: C. Hayden Ames, Esquire

San Diego Gas & Electric Company

111 Sutter Street

San Francisco, California 94104

Mission Viejo Branch Library

24851 Chrisanta Drive

Mission Viejo, California 92676

Docket Nos. 50-280
and 50-281

Virginia Electric & Power Company
ATTN: Mr. W. L. Proffitt
Senior Vice President - Power
P. O. Box 26666
Richmond, Virginia 23261

cc: Michael W. Maupin, Esq.
Hunton, Williams, Gay & Gibson
P. O. Box 1535
Richmond, Virginia 23213

Swem Library
College of William & Mary
Williamsburg, Virginia 23185

Docket Nos. 50-266
and 50-301

Wisconsin Electric Power Company
Wisconsin Michigan Power Company
ATTN: Mr. Sol Burstein
Executive Vice President
231 West Michigan Street
Milwaukee, Wisconsin 53201

cc: Mr. Arthur M. Fish
Document Department
University of Wisconsin -
Stevens Point Library
Stevens Point, Wisconsin 54481

Docket No. 50-305

Wisconsin Public Service Corporation
ATTN: Mr. E. W. James
Senior Vice President
Post Office Box 1200
Green Bay, Wisconsin 54305

cc: Steven E. Keane, Esquire
Foley, Sammond & Lardner
777 East Wisconsin Avenue
Milwaukee, Wisconsin 53202

Bruce W. Churchill, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Kewaunee Public Library
314 Milwaukee Street
Kewaunee, Wisconsin 54216

Docket No. 50-29

Yankee Atomic Electric Company
ATTN: Mr. Robert H. Groce
Licensing Engineer
20 Turnpike Road
Westboro, Massachusetts 01581

cc: Mr. Donald G. Allen, President
Yankee Atomic Electric Company
20 Turnpike Road
Westboro, Massachusetts 01581

Greenfield Public Library
40 Main Street
Greenfield, Massachusetts 01581

Docket No. 50-309

Yankee Atomic Electric Company
ATTN: Mr. Robert H. Groce
Licensing Engineer
20 Turnpike Road
Westboro, Massachusetts 01581

cc: Mr. E. W. Thurlow, President
Maine Yankee Atomic Power Company
9 Green Street
Augusta, Maine 04330

Mr. Donald E. Vandenberg
Vice President - Engineering
Yankee Atomic Electric Company
20 Turnpike Road
Westboro, Massachusetts 01581

John A. Ritsher, Esquire
Ropes & Gray
225 Franklin Street
Boston, Massachusetts 02110

Mr. John M. R. Paterson
Assistant Attorney General
State of Maine
Augusta, Maine 04330

Harold P. Green, Esquire
Suite 1000
The Watergate
600 New Hampshire Avenue, N. W.
Washington, D. C. 20037

Mr. Nicholas Barth
Executive Director
Sheepscot Valley Conservation
Association, Inc.
P. O. Box 125
Alna, Maine 04535

Wiscasset Public Library Association
High Street
Wiscasset, Maine 04578

Mr. Robert R. Radcliffe
Office of Energy Resources
55 Capitol Street
Augusta, Maine 04330

Mrs. Cali Hollander, President
SAFE POWER FOR MAINE
Stockton Springs, Maine 04981

**ENCLOSURE 1
STEAM GENERATOR OPERATING
HISTORY QUESTIONNAIRE**

NOTE: All percentages should be reported to four significant figures.

I. BASIC PLANT INFORMATION

Plant:

Startup Date:

Utility:

Plant Location:

Thermal Power Level:

Nuclear Steam Supply System (NSSS) Supplier:

Number of Loops:

Steam Generator Supplier, Model No. and Type:

Number of Tubes Per Generator:

Tube Size and Material:

II. STEAM GENERATOR OPERATING CONDITIONS

Normal Operation

Temperature:

Flow Rate:

Allowable Leakage Rate:

Primary Pressure:

Secondary Pressure:

Accidents

Design Base LOCA Max. Delta-P:

Main Steam Line Break (MSLB) Max. Delta-P:

III. STEAM GENERATOR SUPPORT PLATE INFORMATION

Material:

Design Type:

Design Code:

Dimensions:

Flow Rate:

Tube Hole Dimensions:

Flow Hole Dimensions:

IV. STEAM GENERATOR BLOWDOWN INFORMATION

Frequency of Blowdown:

Normal Blowdown Rate:

Blowdown Rate w/Condenser Leakage:

Chemical Analysis Results

Results	Parameter Control Limits

V. WATER CHEMISTRY INFORMATION

Secondary Water

Type of Treatment and Effective Full Power (EFP) Months of Operation:

Typical Chemistry or Impurity Limits:

Feedwater

Typical Chemistry or Impurity Limits:

Condenser Cooling Water

Typical Chemistry or Impurity Limits:

Demineralizers - Type:

Cooling Tower (open cycle, closed cycle or none):

VI. TURBINE STOP VALVE TESTING (applicable to Babcock & Wilcox (B&W) S.G. only)

Frequency of Testing

Actual:

Manufacturer Recommendation:

Power Level At Which Testing Is Conducted

Actual:

Manufacturer Recommendation:

Testing Procedures (Stroke length, stroke rate, etc.)

Actual:

Manufacturer Recommendation:

VII. STEAM GENERATOR TUBE DEGRADATION HISTORY

(The following is to be repeated for each scheduled ISI)

Inservice Inspection (ISI) Date:

Number of EFP Days of Operation Since Last Inspection:

(The following is to be repeated for each steam generator)

Steam Generator Number:

Percentage of Tubes Inspected At This ISI:

Percentage of Tubes Inspected At This ISI That Had Been Inspected At
The Previous Scheduled ISI:

Percentage of Tubes Plugged Prior to This ISI:

Percentage of Tubes Plugged At This ISI:

Percentage of Tubes Plugged That Did Not Exceed Degradation Limits:

Percentage of Tubes Plugged As A Result of Exceedance of Degradation
Limits:

Sludge Layer Material Chemical Analysis Results:

Sludge Lancing (date):

Ave. Height of Sludge Before Lancing:

Ave. Height of Sludge After Lancing:

Replacement, Retubing or Other Remedial Action Considered: (Briefly
Specify Details)

Support Plate Hourglassing:

Support Plate Islanding:

Tube Metalurgical Exam Results:

Fretting or Vibration in U-Bend Area (not applicable to B&W S.G.) AS OF (4)

Percentage of Tubes Plugged	Other Preventive Measures

Wastage/Cavitation Erosion AS OF (4)

Hot Leg: (Repeat this information for the cold leg on Combustion Engineering (C.E.) and Westinghouse (W) S.G.)

Area of Tube Bundle (1)	a	b	c	d	e
% of Tubes Affected by Wastage/Cavitation Erosion					
% of Tubes Plugged Due to Exceedance of Allowable Limit (2)					
% of Tubes Plugged That Did not Exceed Degradation Limit					
Location Above Tube Sheet (3)					
Max. Wastage/Cavitation Erosion Rate for Any Single Tube (Tube Circum. Ave) (Mills/Month)					
Max. Wastage/Cavitation Erosion in Any Single Unplugged Tube (Tube Circum. Ave) (Mills)					

Cracking AS OF (4)

Caustic Stress Corrosion Induced in C.E. and W S.G.

Flow Induced Vibration Caused in B&W S.G.

Cracking (Con't)

Hot Leg: (Repeat this information for the cold leg on C.E. and W S.G.)

Area of Tube Bundle (1)	a	b	c	d	e
% of Tubes Affected By Cracking					
% of Tubes Plugged Due to Cracking					
% of Tubes Plugged That Did Not Exceed Degradation Limit					
Location Above Tube Sheet (3)					
Rate of Leakage From Leaking Cracks (gpm)					

Denting (Not applicable to B&W S.G.) AS OF (4)

Hot Leg: (Repeat this information for the cold leg on C.E. and W S.G.)

Area of Tube Bundle (1)	a	b	c	d	e
% of Tubes Affected by Denting					
% of Tubes Plugged Due to Exceedance of Allowable Limit (2)					
% of Tubes Plugged That Did Not Exceed Degradation Limit					
Rate of Leakage From Leaking Dents (gpm)					
Max. Denting Rate for Any Single Tube (Tube Circum. Ave) (Mills/Month)					
Max. Denting in Any Single Unplugged Tube (Tube Circum. Ave) (Mills)					

TABLE KEY

NOTE: All percentages refer to the percent of the tubes within a given area of the tube bundle.

(1)

Area of the Tube Bundle	No. of Tubes Within the Area
a. Periphery of Bundle ($w_i/20$ rows for B&W; $w_i/10$ rows for C.E. and <u>W</u>)	
b. Patch Plate ($w_i/4$ rows)	
c. Missing Tube Lane (B&W only) ($w_i/5$ rows)	
c. Flow Slot Areas (C.E. and <u>W</u> only) $w_i/10$ rows)	
d. Wedge Regions (C.E. and <u>W</u> only) ($w_i/8$ rows)	
e. Interior of Bundle (remainder of tubes)	

(2)

Allowable Limit for Wastage/Cavitation Erosion:

Allowable Limit For Denting:

(3)

1. Specifies area between the tube sheet and the first support plate
2. Specifies in the following locations: (list the additional locations)

Wastage/Cavitation Erosion:

Cracking:

(4)

Specify the date of the inspection for which results have been tabulated.

VIII. SIGNIFICANT STEAM GENERATOR ABNORMAL OPERATIONAL EVENTS

DATE	SUMMARY
	(Include event description; unscheduled ISI results, if performed; and subsequent remedial actions)

IX. CONDENSER INFORMATION

Condenser Material	Tube Date	Leakage Rate (gpm)	Detectable Limit	Detection Method

X. RADIATION EXPOSURE HISTORY WITH RESPECT TO STEAM GENERATORS

Date	Exam Dosage (Man-Rem)	Repair Dosage (Man-Rem)	Comments

XI. DEGRADATION HISTORY FOR EACH TYPE OF DEGRADATION EXPERIENCED FOR TEN REPRESENTATIVE, UNPLUGGED TUBES FOR WHICH THE RESULTS OF TWO OR MORE ISI'S ARE AVAILABLE

If the results for ten tubes are not available, specify this information for all those tubes for which results are available.

(repeat the following information for each tube and degradation type)

Steam Generator No:

Tube Identification:

Type of Degradation: (specify denting, wastage, cavitation erosion, caustic stress corrosion cracking, or flow induced vibration cracking)

(repeat the following information chronologically for each ISI for which results are available)

ISI Date:

Amount of Degradation: (specify amount and units)

EFP Months of Operation Since Last ISI for Which Results are Given: