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United States Senate

COMMITTEE ON PUBLIC WORKS

WASHINGTON, D.C. 20510

RICHARD B. ROYCE, CHIEF CLERK AND STAFF DIRECTOR
A. B. WITTEY, JR., ASSISTANT CHIEF CLERK
M. BARRY METER, COUNSEL

September 8, 1969

Mr. Wayne M. Harris
Kennan, Carroll, Harris, Creary & Beck
220-233 Powers Building
Rochester, New York 14614

Dear Mr. Harris:

I deeply regret the delay in responding to your letter of June 20 in regard to the nuclear power plant on Oyster Bay, Monroe County, New York. An unusual volume of mail has precluded an earlier reply.

I have forwarded your letter to the Atomic Energy Commission, requesting that they respond directly to you, and forwarding me a copy of their reply.

Sincerely,

EDMUND S. MUSKIE, U.S.S.
Chairman, Subcommittee on
Air and Water Pollution

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KEENAN, CARROLL, HARRIS, CREARY & BECK

JOHN E. KEENAN 1924-1987
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TIMOTHY MALONEY

AREA CODE 716
TELEPHONE 484-8250
220-233 POWERS BUILDING
ROCHESTER, NEW YORK 14614

HOWARD J. YOUNGMAN
WILLIAM G. STAUDENMAIER
COUNSEL

June 20, 1969

Senator Edmund Muskie
United States Senate
Senate Office Building
Washington, D. C.

RE: Oyster Creek No. 1

Dear Senator Muskie:

It is our understanding that the above said nuclear power plant has had a number of problems from supposedly bad welds and metal failure. It is our further understanding that tests were performed to see how the repairs might be made, but the corrodents were never identified.

Would you kindly advise me if the corrodents have now been identified. If they haven't, it doesn't seem to me that the plant should be operated.

I am further concerned that this plant will release radio active material to the atmosphere and liquid solids on a batch basis to Barnegut Bay.

You may wish to check this matter. I would appreciate any current information you may be able to obtain.

With best regards, I am,

Very truly yours,

RECEIVED
BY *bj*
JUN 20 1969

REFERRED TO

Wm/ago

Wayne M. Harris
Wayne M. Harris, Chairman
Air and Water Pollution Committee
Monroe County Conservation Council

David DeKok
113 Conoy St.
Harrisburg, Pa. 17104
Feb. 8, 1995

Director
Division of Freedom of Information
and Publication Services
Office of Administration and Resources Management
Nuclear Regulatory Commission
Washington, D.C. 20555

FREEDOM OF INFORMATION
ACT REQUEST

FOIA-95-68
Rec'd. 2-13-95

Re: Freedom of Information request

Dear Sir or Madam:

Pursuant to the Freedom of Information Act, I would like copies of all documents relating to an investigation conducted by the Atomic Energy Commission's Region I Division of Compliance in the late 1960s of alleged irregularities connected with the construction of the primary loop for the Oyster Creek Nuclear Plant.

This investigation, as described in a Sept. 27, 1973, letter (enclosed) from Richard J. Sullivan, Commissioner of the New Jersey Department of Environmental Protection, to Commissioner William O. Doub of the AEC, was prompted by information provided to Dr. Roscoe Kandle, who then headed New Jersey Gov. Richard Hughes' Atomic Energy Council. Kandle passed the information to Robert Kirkman, then director of the AEC's Region I Division of Compliance. Kirkman then investigated and substantiated the allegations, according to the letter.

No documents pertaining to this investigation were in the Oyster Creek file in the NRC Public Document Room in Washington, D.C., when I visited there on Jan. 20 of this year. My 1991 FOIA request which sought Oyster Creek documents that were not in the PDR also did not yield any records of this investigation.

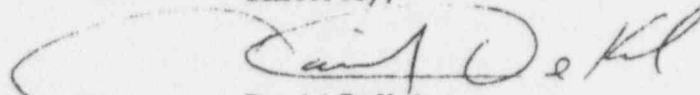
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I need these records for a book I am writing on the history of General Public Utilities Corp., which owns Oyster Creek through its Jersey Central Power & Light Co. subsidiary.

Pursuant to the Freedom of Information Act, I also request "Representative of the News Media" status, which entitles me to a waiver of search charges and 100 pages of free copying. This status is also available to established freelance writers, which I am. I am the author of the book, *Unseen Danger: A Tragedy of People, Government and the Centralia Mine Fire*, published in 1986 by the University of Pennsylvania Press, and have almost 20 years of experience as a newspaper reporter. I have been working on my GPU book for the past six years.

Thank you for your attention to this request.

Sincerely,



David DeKok



RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) REQUEST

NRC FOIA REQUEST NUMBER(S)

FOIA - 95-68

RESPONSE TYPE

FINAL #1 PARTIAL

DATE MAR 10 1995

DOCKET NUMBER(S) (if applicable)

REQUESTER

David DeKok

PART I.—AGENCY RECORDS RELEASED OR NOT LOCATED (See checked boxes)

- No agency records subject to the request have been located. *
 - No additional agency records subject to the request have been located.
 - Requested records are available through another public distribution program. See Comments section.
 - Agency records subject to the request that are identified in Appendix(es) _____ are already available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC.
 - Agency records subject to the request that are identified in Appendix(es) _____ are being made available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC, in a folder under this FOIA number.
 - The nonproprietary version of the proposal(s) that you agreed to accept in a telephone conversation with a member of my staff is now being made available for public inspection and copying at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC, in a folder under this FOIA number.
 - Agency records subject to the request that are identified in Appendix(es) _____ may be inspected and copied at the NRC Local Public Document Room identified in the Comments section.
 - Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, N.W., Washington, DC.
 - Agency records subject to the request are enclosed.
 - Records subject to the request have been referred to another Federal agency(ies) for review and direct response to you.
- Fees
- You will be billed by the NRC for fees totaling \$ _____.
- You will receive a refund from the NRC in the amount of \$ _____.
- In view of NRC's response to this request, no further action is being taken on appeal letter dated _____, No. _____.

PART II. A—INFORMATION WITHHELD FROM PUBLIC DISCLOSURE

Certain information in the requested records is being withheld from public disclosure pursuant to the exemptions described in and for the reasons stated in Part II, B, C, and D. Any released portions of the documents that are not withheld are being made available for public inspection and copying in the NRC Public Document Room, 2120 L Street, N.W., Washington, DC in a folder under this FOIA number.

COMMENTS

*A search of pertinent files indicates that the NRC has no records subject to your FOIA request.

This determination may be appealed to the Executive Director for Operations, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, and should clearly state on the envelope and in the letter that it is an "Appeal from an initial FOIA decision."

This completes NRC's action on your request.

SIGNATURE, DIRECTOR, DIVISION OF FREEDOM OF INFORMATION AND PUBLICATIONS SERVICES

Original signed by: C.A. Reed

DISTRIBUTION—DFIPS Subject, Author, Branch Chief, Director of Administration, Other:

S. SUMMERS DE - J. HUNT, CI - A. STRAUSHAIRE, RE - P. NOLAN - PDR

OFFICE	ADM/DFIPS/AUTHOR	ADM/DFIPS/FOIA BC	ADM/DFIPS/DD	ADM/DFIPS/DIR				
SURNAME	C.A. Reed							
DATE	3/19/95	3/19/95	1/1	1/1	1/1	1/1	1/1	1/1



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Carlson
Caplan
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NOV 4 1969

D. J. Skovholt, Assistant Director
for Reactor Operations
Division of Reactor Licensing (3)

JERSEY CENTRAL POWER AND LIGHT COMPANY (OYSTER CREEK)
DOCKET NO. 50-219

The enclosed report of a special inspection to investigate allegations made by Alan H. Galer, a radio station news director, Asbury Park, New Jersey, in connection with the subject facility is forwarded for information. These allegations were brought to the attention of Mr. L. D. Low by the Honorable William T. Cahill, Representative, Sixth Congressional District, New Jersey.

Our investigative efforts failed to develop new information of safety significance at Oyster Creek or any information of regulatory interest not previously known to the regulatory staff. This matter is considered to be closed.

J. P. O'Reilly

J. P. O'Reilly, Chief
Reactor Inspection and
Enforcement Branch
Division of Compliance

Enclosure:
Investigation Report

cc w/enclosure:
E. G. Case, DRS
R. S. Boyd, DRL (2)
S. Levine, DRL (6)
L. Kornblith, Jr., CO
L. T. Carlson, CO: I w/o encl
REG Central File

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50-219
9/27/73



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

TRENTON 08628

OFFICE OF THE COMMISSIONER

September 27, 1973

Certified Mail #9836

Commissioner William O. Doub
United States Atomic Energy Commission
1717 H Street, Northwest
Washington, D. C. 20545

Dear Commissioner Doub:

Refer to: USAEC Docket 50-219
NJPUC Docket 60-652

A number of years ago the State Government of New Jersey was presented with allegations concerning irregularities connected with the construction of the primary loop for the Oyster Creek Nuclear Electric Generating Station Unit No. 1. The allegations were transmitted to Dr. Roscoe Kandle, who then headed Governor Hughes's Atomic Energy Council. Dr. Kandle elected to advise the then Division of Compliance of these allegations. I am happy to write that the AEC, specifically Mr. Robert Kirkman, then Director of Region I, Division of Compliance, responded immediately and undertook an investigation which essentially substantiated the allegations. Appropriate corrective action was undertaken.

We have been in receipt of a number of anonymous telephone allegations concerning irregularities at Oyster Creek during operation. Some of these allegations if substantiated may have rather severe consequences with respect to the availability of a safety system of the reactor when needed and the overall health and safety of the general public. I am attaching to this letter allegations from a source with the request that an immediate appropriate investigation be undertaken. The Commission is further requested to advise this State Government as to the findings and if indeed the allegations are confirmed, what corrective action can and is being taken. Specifically, did a loss of total electric power take place resulting in inability for any length of time to effect forced convection cooling; and if so, did this result in clad defects and thermal stresses resulting in core structural damage. Finally, is there any substance to the allegation that an abnormal release also occurred.

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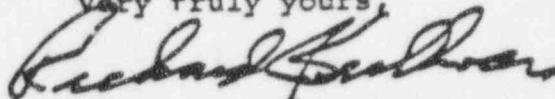
September 27, 1973

The allegations relating to an abnormal occurrence were first called to the attention of this Department in an unusual manner. A reporter, John Allen of the Atlantic City Press, called this Department's twenty-four hour line about 9 p.m. on September 8 and was put in touch with our Nuclear Engineer, Charles Amato. Mr. Amato in turn contacted Mr. J. P. O'Reilly of your King of Prussia office and the New Jersey State Police (per standard procedures). Mr. O'Reilly responded immediately and called the plant and the plant superintendent (at his home), then advised Mr. Amato of his findings which did not suggest a core melt-down or near melt-down as the allegations implied. At a meeting on September 14, Mr. O'Reilly discussed the matter with Mr. Amato, advised him a Reactor Inspector had visited Oyster Creek on September 11, and gave Mr. Amato a copy of Oyster Creek Abnormal Occurrence Report No. 73-19, which is PDR material (this abnormal occurrence had been reported to the AEC on the morning of September 8). A copy of the just noted Abnormal Occurrence Report is attached for the sake of completeness. I would be remiss if I failed to commend Mr. O'Reilly for his cooperation and timely response. We have come to expect this of Mr. O'Reilly and his Staff.

You may be interested in noting that two unusual or abnormal occurrences took place at Oyster Creek about a month apart. Each took place on a Friday or Saturday preceding a Lacey Township Planning Board public meeting scheduled to determine if a Building Permit should be issued for the Forked River Station.

I am looking forward to receiving at the earliest possible date your findings in this investigation.

Very truly yours,



Richard J. Sullivan
Commissioner

Encl.

50-219
9/27/73



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

TRENTON 08625

OFFICE OF THE COMMISSIONER

September 27, 1973

Certified Mail #9836

Commissioner William O. Doub
United States Atomic Energy Commission
1717 H Street, Northwest
Washington, D. C. 20545

Dear Commissioner Doub:

Refer to: USAEC Docket 50-219
NJPUC Docket 60-652

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DR 60-36A

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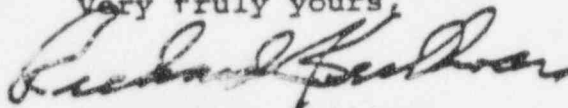
September 27, 1973

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I am looking forward to receiving at the earliest possible date your findings in this investigation.

Very truly yours,



Richard J. Sullivan
Commissioner

Encl.



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
870 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645-3941

June 10, 1969

J. P. O'Reilly, Chief, Reactor Inspection
and Enforcement Branch, Division of Compliance, HQ

COMPLIANCE INVESTIGATION REPORT
JERSEY CENTRAL POWER & LIGHT COMPANY (OYSTER CREEK 1)
DOCKET NO. 50-219, LICENSE NO. DPR-16

Attached for your information and appropriate action are 5 copies (15 under separate cover) of the final report of the investigation into allegations made concerning the procurement and installation of certain piping, fittings and valves at the subject facility. This report covers, with additional details, the results of CO's investigative activities between February 28, 1969 and April 29, 1969, previously summarized in the two interim reports issued April 25, 1969 and May 6, 1969, respectively.

This investigation was aimed primarily at those allegations, made by Mr. Cella, that pertain to Oyster Creek 1. Other allegations by Mr. Cella, both general and specific - including some pointing to Indian Point 2, Dresden 2 and the Power Burst Facility - are discussed in the section of this report entitled "Interviews With Complainant." As you are aware, these latter allegations are being investigated separately by CO (and RDT), some preliminary results of which are discussed in previously issued memoranda.*

Information from another source intimately involved in this case, which points further to the possible applicability of this general problem on a national scale and which included reference to several specific reactor facilities currently under construction, has also been documented.**

The principal results of this investigation are reflected in the Summary of Facts section of the report. In brief, the allegations made relating to piping and valves were determined to be substantive; whereas, no information was developed to substantiate the allegations made relating to

*Memorandum, Carlson to O'Reilly, "Allegations by A. A. Cella Relating to the Power Burst Facility, NRTS, Idaho", dated May 9, 1969. Memorandum, Moseley to O'Reilly, "Investigation into Piping Allegations as Related to Indian Point No. 2", dated April 28, 1969.

**Memorandum, Carlson to O'Reilly, "Additional Information Pertaining to Allegations relating to Pipe at Nuclear Facilities and Status of Investigation at Oyster Creek 1", dated May 20, 1969.

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the quality of fittings. The recommendations of the investigating team regarding these issued have been communicated to you in the forwarding memoranda accompanying the previously referenced interim reports.

During our interviews with Mr. Cella, he persistently conducted himself in a rambling manner, continuously jumping from one subject to another. In addition, inconsistencies and/or inaccuracies were often encountered in his statements. Some of the latter items appear in the report since an attempt has been made to present the facts as stated by him. Needless to say, these aspects of the interviews complicated the business of establishing all the necessary specifics on each of the allegations made by Mr. Cella.

A meeting was held with Dr. R. P. Kandle, New Jersey State Commissioner of Health, at his office in Trenton, New Jersey, on April 16, 1969, for the purpose of advising the State of New Jersey as to the status of developments relating to Dr. Kandle's letter to Mr. Kirkman dated February 21, 1969. This office was represented by Mr. Kirkman and the writer. Mr. C. G. Amato and Mr. W. Gural, Esq., Deputy Attorney General, Department of Public Utilities, New Jersey, were also present. Dr. Kandle stated that they, the interested representatives of the state, were not raising any doubts as to the competence of REG in these matters, that they had the fullest confidence in REG in this regard, but that they were generally interested and concerned. Dr. Kandle concluded by indicating his appreciation for being kept informed and made statements to the effect that the responsibility for resolution of the matters under discussion rightfully belonged to REG.

For the purpose of continuity, i. e., to reflect the total picture in this memorandum, reference is made to the TWX dated April 8, 1969*, issued by the writer to you and summarizing the results of the final precicensing inspection of the subject facility, and to the forwarding memorandum from Mr. R. H. Engelken to Dr. P. A. Morris, dated April 8, 1969, both of which highlighted the safety significance of the areas under investigation and recommended the issuance of a limited Provisional Operating License pending satisfactory resolution of these areas of concern. Also, reference is made to Provisional Operating License DPR-16, issued to the subject utility on April 9, 1969, which includes the limitation that the facility be operated at power levels up to 5 Mwt maximum and without the reactor head in place pending resolution of three outstanding issues, including the areas of allegation. Finally, reference is made to the letter from Dr. Morris to Mr. J. E. Logan, Vice President, JC, which speaks to these three outstanding issues, requests reports of specifics regarding their resolution, and states that a review of this information by DRL will be necessary before the full power operating license can be issued.

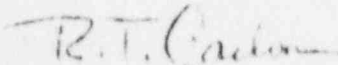
Also, for the same purpose as stated in the previous paragraph, it is to be noted that this matter has been the subject of many meetings, telecons, and additional memoranda involving many interested organizations including the

*Also CO Inspection Report No. 219/69-2, dated May 28, 1969.

following: CO, Parameters, Inc. (CO Consultants), DRL, DRS, REG, RDT, INS, ACRS, Commissioners, and JCAE.

As you are aware, JC-GE-B&R have underway a verification program relating to the areas of allegation. An interim report on the scope and results of their program was presented by them at a meeting with DRL-CO held for that purpose at Headquarters on May 14, 1969. In a subsequent meeting between representatives of JC-GE and DRL-CO, held at Headquarters on May 27, 1969, JC-GE were informally provided with a document prepared by CO and which outlined the items, in addition to those completed by JC-GE-B&R in their verification program, to be performed to meet Regulatory requirements.

In view of the admission by JC-GE that the pedigrees of the subject piping and valves installed at OC-1 are seriously deficient, that a verification program is underway, and that the program is under review by REG, this office does not plan any further investigation, per se, and considers this aspect of the matter closed. A followup audit by CO to evaluate the effectiveness of the JC-GE-B&R verification program will be performed at the appropriate time.



R. T. Carlson
Senior Reactor Inspector

Enclosure:
5 Cys. of Compliance Investigation Rpt.
(15 sent under separate cover)

COMPLIANCE INVESTIGATION REPORT

DIVISION OF COMPLIANCE

Region I

Subject: JERSEY CENTRAL POWER & LIGHT COMPANY
Oyster Creek Unit No. 1
Lacey Township, New Jersey
License No. DPR-16
Docket No. 50-219

Type of Case: Suspected Violation - Allegation that Piping, Fittings and Valves installed at Oyster Creek Unit No. 1 do not meet ASTM or ASME Codes, or A/E Specifications.

Period of Investigation: February 28, 1969 to April 29, 1969

Investigation Team: Robert T. Carlson, Senior Reactor Inspector, CO:I
William J. Collins, Metallurgical Engineer, CO:HQ
John W. Flora, Senior Reactor Inspector, CO:IV
Roy M. Gustafson, Materials & Metallurgy Branch, DRS
Norman C. Moseley, Senior Reactor Inspector, CO:I
Alvin F. Ryan, Investigation Specialist, CO:I
Joseph M. Tillou, Reactor Inspector (Construction), CO:I
John J. Ward, Investigation Specialist, CO:IV

Prepared By: Alvin F. Ryan 6/9/69
Alvin F. Ryan, Investigation Specialist Date

Reviewed By: R. T. Carlson 6/9/69
Robert T. Carlson, Sr. Reactor Inspector Date

13/RAC sep. copy
OPR 6/15/69
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PDR

REASON FOR INVESTIGATION

On February 28, 1969, CO:1 received a letter dated February 21, 1969 from Dr. Roscoe B. Kandis, Vice Chairman, New Jersey Atomic Energy Council, reporting that on Thursday, February 13, 1969 Alexander A. Cella and Paul E. Kiebler, President and Vice President, respectively, of Pipeco Steel Corporation, Dover, New Jersey (Pipeco), informed Commissioners of the Public Utilities Commission and a Deputy Attorney General for the Department of Public Utilities that pipe had been installed at Oyster Creek Unit No. 1 (OC-1) that did not meet the specifications of the American Society for Testing Materials (ASTM).

A telephone call to Cella on February 28, 1969 by Norman C. Moseley, Senior Reactor Inspector CO:1, elicited further general allegations to the effect that material was supplied by firms which, with the knowledge of subcontractors and fabricators, ignored purchase specifications and American Society of Mechanical Engineers (ASME) codes, that material was supplied by firms which were not qualified to manufacture it and which were not distributors for any of the known qualified manufacturers, that in some cases material certifications which were provided were falsified or improperly verified, and that prior to placing orders with fabricators, inspections were not made of the fabricators' shops or quality control programs. Cella further alleged in this telephone conversation that some pipe which was specified to be ASTM A-312 actually was welded with filler metal, that this particular pipe was thin-walled and the use of filler metal made the pipe unsuitable for nuclear applications.

In a subsequent personal interview conducted March 11, 1969, Cella, in addition to the allegations set out above, charged piping suppliers in general with gross negligence on delivery of material for nuclear plants, that it is a common practice of suppliers to falsify material reports to cover shipment of stock material in filling nuclear purchase orders, that Burns & Roe, Incorporated (B&R) had bought used valves for OC-1, had them rebuilt by a Clifton, New Jersey firm and then requested Cella who owns Universal Testing Company, Cedar Grove, New Jersey, to test and certify these valves to specifications.

Cella further alleged that all 6", 8" and 10" piping at OC-1 is suspect because although ordered to meet specification ASTM A-376, the material supplied was ASTM A-312 with filler metal. Further, fittings for the 6", 8" and 10" pipe were welded by nonqualified welders and that no final testing or quality control was conducted on the welding.

The investigation of these allegations, which speak to three general areas -- piping, fittings and valves, was technically initiated on February 28, 1969 by CO:1 with the telephone call by Moseley to Cella. However, it was not until March 11, 1969 when CO:1 was finally successful in arranging the above referenced interview with Cella that the investigation actually began.

SUMMARY OF FACTS

By direct observation at the OC-1 site, documentation reviewed, and interviews with key individuals, it has been established that piping that does not comply with the applicable specifications invoked originally by B&R has been installed in the facility, including some in important safety related systems. Specifically, the information developed indicates that the subject piping does not conform to the required standards of ASTM A-312 (seamless or welded without filler metal) or ASTM A-376 (seamless). Further, insufficient evidence has been produced by GE or B&R to support their subsequent claim that the piping conforms to the standards of ASTM A-358 (welded with filler metal). Additionally, allegations that unqualified manufacturers supplied pipe, and that inadequate material certifications were provided, have also been found to have substance.

In a similar manner to that outlined above, it has been established that contrary to the B&R specifications, which call for new materials and equipment, some valves of questionable origin and history (surplus or reconditioned), and for which no material certifications were provided, were supplied to this project. It has also been established that code required certifications are lacking for other valves supplied. Some of the valves fitting these categories have been identified as being designated for safety related systems.

The investigative efforts reflected herein have revealed no information to substantiate the allegations made relating to the quality of fittings.

Persons Interviewed or Contacted

Alloy Tube & Pipe Corporation, Houston, Texas (ATAPCO)

Alexander W. Galbraith, President

W. O. Strong, Jr., General Manager

Bergen Industrial Supply Company, East Paterson, New Jersey (Bergen)

Mary Hill, Estimator and Order Clerk

Burns & Roe Incorporated, Oradell, New Jersey (B&R)

Guido A. Lari, Project Engineer for OC-1

Herbert Jung, Quality Control Engineer

Jack Brodsky, Quality Assurance Supervisor

H. H. Minshall, Senior Site Representative at OC-1

General Electric Company (GE)

Donald K. Willett, Project Manager for OC-1

Robert A. Huggins, Principal Project Engineer for OC-1

Lou M. Loeb, Manager, Materials and Quality Services, Domestic Turnkey Projects

K. William Hess, Manager, Site Operations at OC-1

Neil M. Strand, Site Construction Manager at OC-1

Jersey Central Power & Light Company (JC)

George H. Ritter, Vice President and Project Manager for OC-1 (also Director, Nuclear Group, General Public Utilities (GPU))

Donald A. Rees, Assistant Project Manager for OC-1

Buddy G. Avers, Manager, Quality Control, GPU

Thomas J. McCluskey, Plant Superintendent for OC-1

Ray Zograw, MPR Associates (Consultants to JC)

Metropolitan Plumbing Supply Corporation, Long Island City, New York (Metropolitan)

Bill Kane, President

Bob Kane, Secretary

Pipeco Steel Corporation, Dover, New Jersey (Pipeco)

Alexander A. Cella, President

Paul E. Kiebler, Vice President

Swepeco Tube Corporation, Clifton, New Jersey (Swepeco)

James A. Same, Technical Director and Quality Control Manager

James Michie, Sales Manager - Special Products

Tubeco Incorporated, Brooklyn, New York (Tubeco)

Arthur A. Green, Vice President

Anthony F. Lopez, Assistant Manager, Engineering Department, and Manager, Quality Control

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Investigation Trips Covered By This Report

<u>Date(s)</u>	<u>Place</u>	<u>Persons Making Trip</u>
March 11, 1969	Pipeco Steel Corp., Dover, NJ	Ryan, Tillou
March 17, 1969	Pipeco Steel Corp., Dover, NJ	Kirkman, Ryan, Tillou (Cells not available)
March 18, 1969	Burns & Roe, Inc., Oradell, NJ	Flora, Ryan
March 18-19, 1969	Oyster Creek Unit No. 1	Carlson, Gustafson
March 20-21, 1969	Oyster Creek Unit No. 1	Carlson, Flora, Gustafson, Ryan
March 25-26, 1969	Oyster Creek Unit No. 1	Carlson, Ryan, Tillou
March 26-27, 1969	Burns & Roe, Inc., Oradell, NJ	Carlson, Ryan, Tillou
March 28, 1969	Tubeco, Brooklyn, NY	Carlson, Ryan, Tillou
April 2-3, 1969	Alloy Tube & Pipe Corp., Houston, Texas	Flora
April 2-5, 1969	Alloy Tube & Pipe Corp., Houston, Texas	Ward
April 2, 1969	Sweepco Tube Corp., Clifton, NJ	Ryan, Tillou
April 3, 1969	Pipeco Steel Corp., Dover, NJ	Kirkman, Ryan, Tillou (Cells not available)
April 8, 1969	Alloy Tube & Pipe Corp., Houston, Texas	Flora
April 15, 1969	Pipeco Steel Corp., Dover, NJ	Kirkman, Ryan, Tillou
April 18, 1969	Burns & Roe, Inc., Oradell, NJ	Ryan
April 22, 1969	Bergen Industrial Supply Co., East Paterson, NJ	Collins, Ryan
April 22, 1969	Metropolitan Plumbing Supply Co., Long Island City, NY	Collins, Ryan
April 29, 1969	Bergen Industrial Supply Co., East Paterson, NJ	Ryan
April 29, 1969	Burns & Roe Inc., Oradell, NJ	Ryan

DETAILS

Introduction

1. In a letter dated February 21, 1969 addressed to the Director, Compliance Division, Region I, received at CO:1 on February 28, 1969, Dr. Roscoe B. Kandle, Vice Chairman, New Jersey Atomic Energy Council, informed CO:1 that on Thursday, February 13, 1969 Messrs. Alexander A. Cella and Paul E. Kiebler met Commissioners R. T. Byrne and A.K. Gressi of the Public Utilities Commission and W. Gural, Esq., Deputy Attorney General for the Department of Utilities. Cella and Kiebler were identified in the letter as officers of Pipeco Steel Corporation, East Dickerson Boulevard, Dover, New Jersey. A copy of this letter is attached hereto as Exhibit A.
2. According to the letter, Cella and Kiebler informed Gural that Pipeco refused to supply pipe to JC for use in Oyster Creek Unit No. 1 since it did not meet the appropriate specifications. Cella and Kiebler further stated they have learned that another firm (not identified) supplied the piping which meets the ASTM A-312 FM standard. Cella and Kiebler, according to the letter, expressed the opinion that the use of the filler metal was objectionable and led to a reduction in quality not allowable for a nuclear power station.
3. After review of the letter from Kandle, Norman C. Moseley, Senior Reactor Inspector CO:1, telephoned to Cella on February 28, 1969 to obtain more specific information concerning the allegations made in the letter. Cella refused to talk specifics but made the following generalizations concerning OC-1 and other nuclear plants:
 - a. Material was supplied by firms which ignored purchase specifications and ASME codes. This was done with the knowledge of subcontractors and fabricators.
 - b. Material was supplied by firms which were not qualified to manufacture it and were not distributors of any of the known qualified manufacturers.
 - c. In some cases material certificates which were provided were falsified or improperly verified.
 - d. Prior to placing orders with fabricators, inspections were not made of the fabricators' shops for quality control programs.
4. Cella refused to be specific in connection with the information in the second paragraph of Kandle's letter (see Exhibit A). He stated that Pipeco had not refused to supply pipe to JC but had refused to supply it to an unnamed subcontractor for the reason given. Cella defined "appropriate specifications" to be ASME Code Section III. In answer to the reference ASTM A-312 FM, Cella said some pipe which was specified to be ASTM A-312 was actually ASTM A-312 FM. He said this particular pipe is thin-walled and the use of filler metal made the pipe unsuitable for nuclear application.
5. Although Cella was requested to be specific he declined to do so, but stated that he would meet with Moseley after Cella visited the Oyster Creek site on March 4 or 5, 1969.
6. Contrary to the assurance given to Moseley by Cella on February 28, 1969, Cella did not again communicate with Moseley.

Background Information

7. The construction of OC-1 for Jersey Central Power & Light Company, which is a part of General Public Utilities is being performed as a turnkey project by General Electric Company. Architect-engineers for the construction of the plant are Burns & Roe, Inc., Oradell, New Jersey. MPR Associates, Washington, D. C., have been retained by Jersey Central Power & Light Co. as consultants.

Interview with Complainant, Alexander A. Cella, President, Pipeco Steel Corporation

8. The following interviews and telecons were made with the complainant to establish as specifically as possible the allegations made by him in the letter from Br. Kandle dated February 21, 1969, and in the telecon with Moseley on February 28, 1969.
9. Cella was interviewed at his office on March 11, 1969, by Tillou and Ryan. Cella identified himself as President of Pipeco Steel Corporation. He stated he is also the owner of Universal Testing Company and that he also acts as an x-ray consultant, supplies radiographic and testing services and consulting services on piping, fittings and materials. Cella stated that he has an AEC byproduct material license number 29-08540-01 authorizing the use of Ir-192 and Co-60 as sealed sources in radiography.
10. When Cella was informed of the purpose of the visit by Tillou and Ryan he remarked, "this thing is still haunting me."
11. Cella was asked to give specific information concerning the statements he had made to the representatives of the State of New Jersey and to Moseley. He declined to do so. He stated that if he were identified as the source of the information on which his allegations were based or if he were asked to testify at a hearing or other proceeding he would decline to do so and deny that he had made the statements attributed to him.
12. Cella was given assurance that he would not be identified as the source of information, that any information he gave to the CO:1 representatives would be treated in confidence.
13. Cella stated that there is gross negligence by piping suppliers in general on delivery of material for nuclear plants. He stated that it is a common practice of suppliers to falsify material reports to cover the shipment of stock material in filling nuclear purchase orders.
14. Cella stated that B&R bought used valves to be used in OC-1. Cella stated that these valves were rebuilt by a Clifton, New Jersey firm. According to Cella, B&R then requested him as owner of Universal Testing Company to test and certify these rebuilt valves to specifications. Cella stated he refused to do so and that the work was done by a New York testing firm, which he was unable to identify.
15. Cella claimed that all 6", 8" and 10" piping at Oyster Creek Unit No. 1 is suspect. He stated that Albert Pipe Supply Company (Albert), a distributor, supplied pipe and fittings to Tubeco, Inc. (Tubeco) for fabrication into spools. According to Cella Albert bought domestic and foreign pipe particularly pipe manufactured by Sandvik Pipe and Tube Corporation (Sandvik).
16. Cella stated that Albert (Tubeco?) received a purchase order from B&R for 6", 8" and 10" pipe to specification ASTM A-376 which is the specification for stainless steel seamless pipe. According to Cella, Tubeco lacked the capability to manufacture the pipe and requested Pipeco to furnish it and specifically to ASTM A-312 (stainless steel, seamless or welded). Cella stated that the request to supply the pipe lacked any requirement for tests, inspections, ultrasonic tests for wall thickness or to meet any weight criteria. According to Cella, these were not required since Tubeco informed him it would provide all the necessary paperwork and material certifications. According to Cella, he refused to supply the pipe. Cella stated that the pipe supplied to specification ASTM A-312 would be suspect because it would be underweight or if welded would require the use of filler metal.
17. Cella stated that the 6", 8" and 10" fittings supplied by Tubeco would be suspect because the welders who made the longitudinal seams at Tubeco were unqualified and that there had been no final testing or quality control on the welding. In substantiation of his charges Cella stated that radiographs of butt welds frequently revealed flaws in the longitudinal seams of the welded pipe.
18. Cella stated that the request to Pipeco to supply the piping material to Tubeco had been made about four years ago and he believed he still had the invitation to bid in his retired files. Cella stated that he did not know for which system this pipe was required nor did he know which firm subsequently supplied the piping.

19. Cella charges JC with negligence for not exercising its duty to demand an audit of all quality control programs covering all material used in OC-1. Cella stated that it was his opinion that JC did not check on GE enough, that GE in turn did not check on its people, and that the architect-engineer, M&R, did not check on anyone.
20. With regard to the allegation that falsified material certifications were supplied, Cella stated that he had no specific data concerning this matter. As an illustration he stated that specifications called for mill test reports. He stated that certifications are issued by warehouses and that these may not be accurate copies of the mill test reports or they may not be based on the mill test report at all. Cella stated that information copied from the mill test report may not be included in a certificate subsequently issued by the warehouse.
21. Cella stated that there are three specifications for stainless steel piping. He stated that ASTM A-312 may be supplied either as welded (without filler metal) or as seamless. He stated that ASTM A-358 is welded (with filler metal). ASTM A-376 is the specification for seamless stainless steel pipe. However, he pointed out that the manufacture of stainless steel pipe to A 312 specification in excess of 1/4 inch wall thickness requires the use of filler metal in the welding process, and the use of filler metal in the welding process is not permitted under this specification.
22. Additional allegations by Cella at the time of this interview were that at Indian Point, Dravo piping material had been rejected by Consolidated Edison and that the rejected material was replaced by pipe supplied by Pipeco. Cella stated that his firm supplied the piping for Carolina Power and Light Company's Robinson No. 2 Reactor and that he is supplying the pipe for the Fort Calhoun Reactor. He stated that he would sell pipe only to the specifications submitted.
23. Paul Kiebler, Vice President of Pipeco, joined the discussion for about ten to fifteen minutes. During this time he made the observation that 90% of the problem with which he and Cella are concerned is in the dilution or interpretation of the specifications.
24. Cella also stated that GE is importing pipe from Japan at 40% less than the cost of domestic pipe. He stated that GE could not get certifications of the material from the Japanese producers. Cella also stated that M&R had bought everything possible from Sandvick.
25. As an illustration of his complaint, Cella gave the following two specific instances. He stated that at Dreaden 2, Ladish got the contract for pipe and fittings. According to Cella, Ladish only makes fittings and therefore bought the pipe from the United States distributor for Sandvik. Cella stated the Sandvik material certifications are known to be unreliable.
26. His second illustration concerned Ebasco who was the prime contractor (A/E) on a reactor project in Idaho which Cella later identified in a telecon with Robert T. Carlson on May 8, 1969, as the Power Burst Facility. According to Cella, the Ebasco subcontractor, Howard S. Wright, placed a piping order with National Stainless Corporation (National) for pipe to Ebasco specifications. According to Cella, National placed an order with Pipeco for A-312 material. Subsequently Cella was notified that an inspector representing Ebasco would be at Pipeco to inspect the piping. According to Cella, the inspector rejected the order since A-312 did not meet the Ebasco specifications. Cella stated that neither he nor anyone connected with his firm had been informed at the time the order was placed that it was for a nuclear installation. Cella stated that the entire order was put back in stock and he then manufactured the pipe to the Ebasco specifications, including tests which had been omitted from the original purchase order. Cella stated that this resulted in a six month delay in completion of the project.

Cella was reinterviewed April 15, 1969 by Robert W. Kirkman, Director CO-1, Tillou and Ryan. Two earlier attempts to contact Cella at his office, on March 17 and April 3, 1969, were unsuccessful. At this time Cella was informed that a license had been issued to JC for operation of OC-1 at 5 Mwt maximum and with the reactor head removed.

28. Cella stated that he worked with Helmut Thielch who is a consultant to GE. He stated that he had been informed by Thielch that about five months ago an elbow with a 14" diameter and 1" wall thickness was supplied by Tubeco and was found to be made of two pieces, one alloy and the other carbon steel.
29. Kiebler, who was also present, stated that it would be well to follow the Navy practice of qualifying manufacturers and exercising control over their operations, otherwise no control could be exercised. Cella stated that Tubeco is getting a contract to fabricate pipe for Consolidated Edison at Indian Point, New York. He also gave as an example one Joe Zimmerman, who is head of Western Pipe, who has been authorized to have an N stamp but his plant has no qualifications which would justify authorization for this stamp.
30. Cella was asked to identify the reactor referred to in the earlier interview in which his firm had been asked to supply pipe to National Stainless Corporation. He stated he did not know the name of the reactor but believed it was located at Scoville, Idaho.
31. In a further discussion of fittings, Cella stated that Swepeco, which manufactured welded fittings, had no quality control program and that it did its own radiography of the welds.
32. Cella stated that he would be willing to bet that no mill certifications are available on at least 25% of the pipe or fittings at OC-1. With regard to Albert, Cella stated that they had bought schedule 80 fittings from Ladish and used the test reports received with these fittings to cover additional fittings made by Albert from materials supplied by Pressed Steel Company, a forming company. Cella did not relate this statement to OC-1.
33. Cella again charged that Tubeco had used unqualified welders in its plant claiming that although they had two to three welders qualified to ASME Section IX in their plant, they used up to 40 metal tradesmen welders, not qualified to ASME Section IX. He based his comment on his opinion that Tubeco could not physically have delivered the piping order in the period of time they did using only the two to three qualified welders. He claims that they either stamped the welds using stamps of qualified welders or had used no identifying stamp at all. He alleged that through an arrangement with the local union Tubeco had been permitted to use the unqualified welders in fabricating pipe assemblies which Cella claimed were intended for the export market. He characterized Alloy Tube and Pipe Corp. (ATAPCO), which supplied pipe to Albert for OC-1, as incapable of producing nuclear quality pipe; that material they did manufacture was primarily for use in paper mills.
34. Cella discussed the allegation concerning the procurement and installation of used valves by B&R. He identified them as stainless steel in 6" and 8" sizes. He stated that the valves were bought by B&R at prices which would preclude the purchase of new material. The original version of his story was changed somewhat in that he now stated the valves had been bought by B&R from a New York City supplier. He stated that an acquaintance of his from Clifton, New Jersey was the person who contacted him regarding tests of the valves and certification by Universal Testing Company. Cella stated that he believed B&R had a fixed price contract from GE which motivated B&R to cut all possible corners and to make material purchases with price as the paramount consideration. Cella agreed that he would give Ryan additional information concerning the valves after he had checked with his informant on the specific details of this matter.
35. On April 16, 1969, Ryan telephoned to Cella and was given the following information concerning the purchase of valves. Cella stated that B&R had ordered about \$60,000 worth of stainless steel valves from Bergen Industrial Supply Co. (Bergen), East Paterson, New Jersey. He stated these were in the sizes from 1/2" to 2". Cella stated that the price paid for the valves by B&R was the catalog list price for brand new valves. (Note this statement is contrary to that given by him on April 15, 1969.) Cella stated that Bergen obtained valves from Metropolitan Plumbing Supply Corp. (Metropolitan), Long Island City, New York, which he described as a firm that dealt only in surplus junk valves. Cella stated that it would be impossible for Metropolitan to have any type of documentation to certify the materials in the valves.

36. When questioned about his statements concerning 6" and 8" valves, Cella stated he had no specific information, that the information he had was only generalities. He was asked if he would provide the name of his informant in order that a direct interview could be conducted. Cella stated he would telephone Ryan on April 17, 1969.
37. Cella did not telephone to Ryan on April 17, 1969 as agreed and after several attempts Ryan finally was able to speak with Cella by telephone late on that date. Cella again declined to identify his informant. Cella stated the B&R purchase orders were as follows. Purchase order BR-2299-177 for valves to specification S2299-55. Cella stated that Bergen bought reconditioned, used surplus valves under this purchase order. He stated that purchase order BR-2299-164 was also the medium through which reconditioned, used surplus valves were procured. Cella stated that items 303 and 389 on purchase order 164 included valves up to 4" in size. He stated these were used in the following systems: Fuel Pool Cooling Condensate Transfer, Isolation Condenser, Liquid Poison, Heating, Demineralizer Water, Reactor Head Cooling, Nitrogen, Fire Protection and Domestic Water. Cella stated that as far as he could ascertain there had been no recertification of the valves purchased through Bergen from Metropolitan. As an example of the prices paid by B&R which according to Cella are the catalog prices, he stated that 3/4" valves were bought at \$153.80 each, 4" valves at \$239.25 each and 3" valves for \$149.00.

Analysis of Allegations (As of March 11, 1969 Interview)

38. The statements, charges and allegations made by Cella as of the March 11, 1969 interview and pertaining to OC-1 were analyzed. As a result, four systems were chosen by CO for the purpose of investigating the allegations relating to piping and fittings. The bases for the choice of systems included such considerations as: material composition, line size, supplier(s) of components, and safety significance. The systems chosen were: Core Spray, Isolation Condenser Shutdown Cooling, and Cleanup Demineralizer.
39. Because of the general nature of the allegation relating to valves, as of the March 11, 1969 interview, this area was given a lower priority at the outset of the investigation pending the development of more specific information.
40. For the sake of clarity, the report hereafter is broken down into the three general areas of allegation, i. e., piping, fittings and valves.

Investigation of Allegations Concerning Piping

41. Five firm allegations concerning the piping at OC-1 were developed as follows:
- a. Piping was supplied for use in OC-1 that was designated ASTM A-312 FM.
 - b. All 6", 8" and 10" diameter A-312 (stainless steel) pipe at OC-1 is rejectable because it is either underweight, or was made by the addition of filler metal.
 - c. The firms that supplied the pipe material in question (presumably A-312 FM) were neither qualified to manufacture it, nor distributors of any known qualified manufacturer.
 - d. Material certificates were provided that were inadequate, or were only supplier affidavits instead of true mill certifications.
 - e. A-312 seamless or welded pipe for OC-1 was substituted for B&R specified A-376 pipe.
42. On March 17, 1969, Carlson telephoned to George Ritter, Vice President and Project Manager for OC-1, JC, and Donald Rees, Assistant Project Manager for OC-1, JC. The purpose of the call was to inform JC through these individuals that certain allegations had been made relating to OC-1, and that an investigation by CO was underway. Further, that they would be contacted in this regard in the near future by Flora.

43. Ritter and Rees informed Carlson that about a month prior to this call they had heard from a representative of the State of New Jersey that people from Pipeco had visited the office of the Public Utilities Commission and made allegations to the effect that pipe at OC-1 did not meet nuclear standards. They indicated that they had heard also that the State of New Jersey had written a letter on this matter to the Region I, Division of Compliance. They said that they had communicated with the representatives of Pipeco in this regard, both in telephone calls and during a visit of the latter to the JC offices in late February, 1969, but that the Pipeco people denied making the allegations.
44. Rees informed Carlson that it was his understanding that the questioned piping was limited to that 10" in diameter. He said that following the initial indication of any problem, about mid-February, 1969, he notified both David Kregg, Project Manager for B&R, and Neil Strand, Site Construction Manager for GE, of the situation and requested that they review the matter. He stated that he was subsequently informed that there was some material present in the Core Spray and Isolation Condenser Systems at OC-1, that was stainless steel and seam welded, i. e., with filler metal. He stated that he had been told by Kregg and Strand that the pipe was in accordance with applicable specifications and that on this basis JC had not investigated the matter any further.
45. On March 18, 1969, as prearranged, Flora telephoned to Ritter and Rees to discuss in more detail the nature of the allegations, to outline in general terms the plans of CO in that regard, and to request of JC their cooperation and assistance. When asked if there was any JC documentation that bears on the subject areas, Ritter informed Flora that Don Rees had talked with Cella and Kiebler of Pipeco but he did not believe there was anything in writing to document this conversation. He reiterated his previous statement to Carlson that JC was in the peculiar position of being unable to rebut the allegations because the person reportedly making the allegations now denies having made them.
46. Flora informed Rees of the specific allegations and through him sought to have a representative of JC accompany the investigative team. Rees suggested that the Project Engineer at B&R, Guido A. Lari, be the contact for any information.

Investigation at Burns & Roe, Incorporated, Oradell, New Jersey

47. On March 18, 1969 Flora and Ryan interviewed Lari at his office in Oradell, New Jersey. Prior to the meeting, Flora had suggested in a telephone conversation with Lari that he should check with GE to ascertain whether that company had any reservations about AEC personnel talking to B&R personnel on these matters without the specific acknowledgement or approval or presence of GE representatives. Lari had informed Flora that he believed that the plant had been "written off" and that GE would require a statement of this agency's inquiry in writing. Lari suggested that Lou Loeb, Manager, Materials and Quality Services - Domestic Turnkey Projects (GE), should be contacted by this agency.
48. At the interview with Lari, Flora read off the allegations in order to acquaint Lari with the nature of the charges and to obtain his comments thereon. With regard to the first allegation, that piping supplied for use at OC-1 was designated ASTM A-312 FM, Lari asked whether the pipe was so stamped. He pointed out that the specification A-312 does not allow the use of filler metal and he would like to know whether the piping was so stamped.
49. At this point, Lari interrupted the interview to telephone to the site and to speak to H. H. Minshall, Senior Site Representative for B&R. He requested Minshall to go into the reactor facility to read the material designations on the stainless steel piping if possible. Lari remarked to Flora and Ryan that Minshall informed him that most of the piping had been insulated and it might be difficult to get this information.
50. Lari stated that B&R did not purchase any material designated A-312 FM. He stated that he did not know whether material so designated was supplied to the site. He asked Flora and Ryan whether material certifications would be acceptable to substantiate the quality of the pipe that had been installed.

51. Lari made the same response with regard to allegation number 2 that all 6", 8" and 10" diameter A-312 pipe is rejectable because it is underweight or had been made with the addition of filler metal. He then suggested that what CO was seeking were the calculations to determine wall thickness of the pipe. Another question he suggested CO was raising was "is the pipe that is installed equivalent to the specifications, or does B&R have the authorization to install welded pipe?" He inquired whether a copy of a letter authorizing the use of welded pipe would satisfy CO's needs.
52. At this point the interview was interrupted by a telephone call from Lou Loeb who talked with Flora and Lari.
53. In his conversation with Flora, Loeb stated that he had been unaware of the situation into which this agency was inquiring until about one hour before. Loeb stated he was very aroused, that he felt this matter had been handled very poorly. Flora informed Loeb that this agency had cleared with JC, that he had informed Lari that CO would not discuss the matter with him unless he was certain that GE would not object to the interview, and that CO was agreeable that GE have a representative present. Loeb stated he would call Flora at Lari's office within the next hour.
54. Lari then telephoned to Don Willett, Project Manager (GE), at the site. Willett informed Lari that the GE people at the site were awaiting word from Loeb. Lari then read the list of questions given to him by Flora to Willett and requested that Willett inform Carlson when the answers to these questions could be made available.
55. When the interview was resumed, Lari stated categorically that piping designated ASTM A-312 FM was not installed at OC-1. He stated that authorization for A-358 pipe made from A-240 plate, which is the same specification as the recirculation system pipe, had been included in the GE design criteria. Lari stated that he personally had notified Tubeco, the fabricator, of the acceptability of A-358 and A-240.
56. Lari stated that in no case is the wall thickness of piping below the specification including corrosion allowance.
57. With regard to the allegation that firms that supplied A-312 material were neither qualified to manufacture it nor were they distributors of any known qualified manufacturer, Lari stated he did not know how to satisfy CO's concerns in this area.
58. With regard to the allegation that inadequate certifications had been provided, Lari stated that the certifications had been sent to GE-APED at San Jose, California, the B&R site office at Oyster Creek, the GE site office at Oyster Creek and the B&R office at Oradell, New Jersey. Lari stated these certifications had been reviewed by engineers employed by B&R. He further stated that B&R does not accept inadequate certifications but does accept facsimiles of the certifications. Lari again reiterated that for the 6", 8" and 10" stainless steel pipe he had all of the material certifications.
59. Concerning the last allegation regarding the piping, Lari stated that he knew of no application where ASTM A 376 (seamless stainless steel pipe) was specified with out A-312 (stainless steel, seamless or welded) being equally acceptable. Lari again stated that A-312 FM was not knowingly allowed by B&R.
60. The interview was again interrupted by a telephone call from Minshall. Lari stated that Minshall informed him that there were no markings on the accessible exposed piping or that where there had been markings they had been painted over. All the remaining pipe was either insulated or was inaccessible for lack of scaffolding.
61. Lari stated that he believed he could answer 95% of the questions at the time of this interview. He stated he believed some of the statements on which the allegations were based had been made in error. He stated that if he were in the place of JC or GE he would be asking who is making these statements. He stated that he is certain that GE and B&R have the material certifications and he cannot imagine that they do not have them.

62. Lari stated that he had submitted the calculations for the wall thickness of the pipe, including corrosion allowances to GE. He stated that in no case were these calculations under the specifications for A-312 or A-376. He stated that because of strikes and other factors, delivery of the specified pipe could not be made. When he communicated this information to GE he was advised that the use of ASTM A-358 pipe using A-240 plate was authorized under the design criteria and he so notified Tubeco, fabricators of the pipe spools. Lari repeatedly questioned what was behind these allegations. He pointed out that B&R had a man at ATAPCO, suppliers of the pipe to Tubeco, and that 100% radiography of the welds on the piping had been required.
63. It should be noted that if pipe were manufactured to the requirements of the purchase order issued to ATAPCO which specified A-312, the thickness requirements of A-312 would be applicable. A copy of the purchase order from Albert to ATAPCO dated October 25, 1966, obtained from Tubeco is attached hereto as Exhibit B. The resulting pipe could be underweight by the standards of A-358, which in the diameters of interest requires thicker walls than does A-312. (See table below.)

Pipe diameter	Sch. 80 (USAS) (B36.19)	Minimum Acceptable ¹		Available ²
		A-312	A-358	Certified Values
6"	.432	.378	.422	.431
8"	.500	.437	.490	.500
10"	.594	.520	.584	.593

Notes: (1) Tolerances in thickness of the plate are as follows:

For A-312 ± 12½%
For A-358 ± 10 mils

These tolerances have been factored into the above table.

(2) A few (~ 5) certifications of thickness of plate used by ATAPCO have been seen by Regulatory representatives. No values were less than the minimum thickness requirements of A-358.

64. Again discussing the qualifications of suppliers, Lari stated he did not know how else to determine the qualification of a supplier except on the basis of the firm's reputation in the industry or its possession of the ASME code stamp.
65. Lari stated that Loeb had made an audit of the various piping systems and that there was also an audit that had been performed by B&R personnel. In conclusion Lari stated that he knew of no place in which only ASTM A-376 had been specified and in which ASTM A-312 was not acceptable as a substitute. He reiterated that very definitely pipe designated as ASTM A-312 FM had not been installed in the facility. Lari stated that all 6", 8" and 10" piping had been bought from ATAPCO through Albert and had been fabricated by Tubeco.

Investigation at Site

66. On March 18-21, 1969, Carlson and Roy Gustafson, Division of Reactor Standards, were at OC-1. Flora and Ryan were also present at OC-1 on March 20-21, 1969.
67. Carlson and Gustafson visually examined the stainless steel piping and fittings installed in the four systems chosen for review: Core Spray, Isolation Condenser, Shutdown Cooling and Cleanup Demineralizer. Approximately 90% of the selected components were found to be covered with insulation. The scaffolding had been removed and lighting conditions for examination of the components were marginal. The comments in the following paragraphs speak to the observations made regarding the accessible portions of the exposed components.

68. Portions of the Core Spray System in Loop A inside the drywell were examined. Both welded and seamless sections of 8" pipe were noted. One piece of seamless bore the following notation: "A 312; HT-2000, A-376, Type 316, Sulfate A-233." A piece approximately 5' long, located in an unisolatable portion of the system between the reactor vessel nozzle and the first valve, was observed to be clearly welded but its inaccessibility prevented positive confirmation that filler metal was used.
69. Portions of the Core Spray System in Loop B outside the drywell were examined. Several sections of welded 8" pipe and several welded 8" fittings were noted. The weld seams on the pipe had been ground smooth with no clear evidence of weld beads or ripples. One piece, approximately 2' long and located upstream of isolation valve V-20-41 bore the notations: "NZ3.2, 312 A&P, T-1195." Another piece, approximately 4' long and located upstream of valve V-20-18 was identified: "NZ2.46, Alloy Tube (smudged words) code." In Core Spray System Loop B, outside the drywell, 14" length of 8" pipe (upstream of isolation valve V-20-15) was observed to have been welded with filler metal. A top layer of the weld deposit had been ground, but a lower layer had not been machined and weld beads were in evidence. Several elbows of apparent welded construction but without clear identification were also noted in these portions of the A and B Loops in the Core Spray System.
70. Two lengths of pipe in the Isolation Condenser System, outside the drywell, were observed to be exposed and accessible for examination. The first, a 10" diameter piece approximately 5' in length, located upstream of isolation valve V-14-34, showed clear evidence of being welded with filler metal. Weld beads and ripples were clearly in evidence as the weld surface had not been ground. The pipe had the notation NE2.13 marked on it and the word "York" stenciled on it. The second piece of pipe examined in this system was a 3' length of 8" line, located in the return leg on the downstream side of Condenser A. The designation NE2.14 was marked on it. Also, the following information was stenciled on the line: "Welded A 312 A&P pipe, Tag Job 608800, Reg T1996, Alloy Tube Pipe Corp." This length of pipe also appeared to have been welded with filler metal. None of the fittings in this system were exposed for examination.
71. Portions of the Shutdown Cooling System, located inside the drywell, were examined. The lines, 14" in diameter and designated as NU-1 and NU-2, were observed to be welded but no stencil markings were in evidence to note the type of stainless steel, the specification or the source of manufacture. No fittings were examined in this system.
72. In the Cleanup Demineralizer System, outside the drywell, a large amount of exposed 6" seamless stainless steel pipe was in evidence. Most of this pipe bore stencil markings as follows: "Sandvik Stainless Steel (seamless) 3R60 ASTM 312 Type 316 L Schedule 80." Various heat numbers were in evidence. In addition, several lengths of seamless pipe with the notation "ASTM 316" were noted. The manufacturer of this latter pipe was not identified. Several 6" fittings, welded with filler metal, were also observed installed in this system.
73. The scrap pile was examined by Carlson and Gustafson for stainless steel pipe but the search did not reveal any in the categories in which CO was interested. A 6" diameter piece of schedule 10 pipe was found. This pipe, manufactured to ASTM A 312, was noted to have been welded without filler metal. The difference in appearance from the welded pipe installed in the plant was quite noticeable, i. e., there were no weld beads and the weld surface had not been ground.

The sections of exposed piping visually examined by Carlson and Gustafson on March 18-21, 1969, discussed above, were examined again by Carlson in the company of Avers, GPU, on March 21, 1969. The specific items of note discussed previously were singled out for the benefit of Avers. It was pointed out by Carlson that at least 50% of the piping observed by him (except that in the Cleanup Demineralizer System) was welded with filler metal. Further, that some of this piping (with filler metal) was located in unisolatable portions of the reactor systems. Avers indicated agreement with these observations.

75. Portions of the piping discussed in the previous paragraph were examined again by Carlson with Ryan and Tillou during the March 25, 1969 visit to have additional observance by CO of the conditions noted.
76. On March 21, 1969, Carlson and Gustafson, while at the site, reviewed radiographs of selected field-performed girth welds in the Core Spray System (B&R designation NZ). The purpose of this review was to look for indications of longitudinal seams made with filler metal. Radiographs of welds joining pipe and fittings, and/or valves, previously observed to contain actual or apparent deposits of filler metal were chosen. The specific radiographs reviewed and observations made are as follows:

<u>Weld Identification</u>	<u>Observations</u>
NZ-3-5922	Apparent evidence of filler metal in longitudinal seams
NZ-3-5936	Evidence of filler metal in longitudinal seams
NZ-3-5946	Evidence of filler metal in longitudinal seams
NZ-3-5948A	Evidence of filler metal in longitudinal seams

77. On March 25, 1969, Carlson, Ryan and Tillou reviewed welder qualification records available at the site. Included were some pertaining to the Tubeco shop work. The records examined were found to be acceptable. This area of review was continued at Tubeco and is discussed under the section of this report entitled Investigation at Tubeco.
78. While at the site on March 25, 1969 Carlson and Tillou continued the examination of radiographs of selected field-performed girth welds in the Core Spray System (NZ), the Isolation Condenser System (NE) and the Shutdown Cooling System (NU). The radiographs reviewed and observations made follow:

<u>Weld Identification</u>	<u>Observations</u>
NZ 3 5931A	No apparent evidence of filler metal
NZ 3-5932A	Evidence of filler metal in longitudinal seams
NZ-3-5947	Evidence of filler metal in longitudinal seam
NZ-3-5948	Evidence of filler metal in longitudinal seam
NI-2-5571A	No apparent evidence of filler metal
NE-2-5573	No apparent evidence of filler metal
NE-2-5577	Evidence of filler metal in longitudinal seam
NE-2-5579	Evidence of filler metal in longitudinal seam
NU-2-5703	Evidence of filler metal in longitudinal seam
NU-3-5702	No apparent evidence of filler metal
NU 4-5674	No apparent evidence of filler metal
NU 4-5674A	No apparent evidence of filler metal

The radiographic films discussed above were reviewed on a high intensity film viewer, GE Model BY, Type 1, 115 volts, 80 cycle, 4.0 amperes.

Contract and Specifications

79. B&R Specifications - 7299-60A, -60B and -60C are all entitled: Piping, Reactor Building - Phase I and II Main Mechanical Equipment Installation and Miscellaneous Equipment. Specification -60A is for pipe and fittings fabrication, the contract for which was awarded to Tubeco. The contract for Specification -60B, for pipe supports, was awarded to Bergen-Paterson, Inc. The contract for Specification -60C for field erection of piping, was awarded to Almirall-Doyle, Inc.
80. Part I of Specification -60A is a copy of the contract between B&R and Tubeco which is signed and dated September 27, 1966. In Part II, Technical Specifications, on page 11-20, the pipe in the Core Spray System is specified as: "Material-seamless stainless steel ASTM A-312 or 376, TP 316; Thickness-Schedule 80." The specifications for piping are generally typical for all systems. On page 11-60, Section 2.4-60, Pipe Fabrication Details, corrosion allowance is stated as: "2.4 mils for stainless steel." On page 11-61, there is the following statement: "In addition to the minimum pipe wall thickness required by the code, the following corrosion allowance has been added in determining the pipe wall thickness specified in the material listing: minimum - 0.088 inches for carbon steel; minimum - 0.0024 inches for stainless steel and aluminum."

Authorization for Change in Specifications

81. On March 21, 1969, at the site, Lari, Loeb, Avers, Carlson, Flora, Gustafson and Ryan participated in a discussion of the specifications involved in this investigation. Loeb stated that Lari had located a letter dated October 10, 1966 from GE to B&R which stated that pipe designated ASTM A-312, 376 or 358 could be used in the Class I Systems. Lari stated that the applicable GE design criteria authorized ASTM A-312, ASTM A-358 or ASTM A-376. However, according to Lari, when B&R prepared the specifications they were written to authorize only ASTM A-312 seamless or ASTM A-376 (seamless). When delays of delivery were encountered, Lari communicated with GE at San Jose, California. He stated that he then received the letter dated October 10, 1966 informing him that under the GE criteria the use of ASTM A-358 was authorized. Lari reiterated that under the B&R specifications only seamless pipe had been authorized. The letter referred to from GE to B&R is, according to Lari, the authority for the use of rolled welded pipe.
82. Loeb stated in response to questioning that there is no ASTM A-312 in the plant that has been welded with filler metal.
83. A copy of the pertinent sections from the GE design criteria entitled "Functional Specification and Design Criteria (Piping and Valves) for Jersey Central Oyster Creek Nuclear Power Plant", Revision 3, dated July 13, 1964, was obtained from Lari and is attached hereto as Exhibit C. It states under paragraph 5.0, Materials, subparagraph 5.3.1, that pipe shall be ASTM A-376, A-312 and A-358 Class 1, Type 304 or 316. A copy of the letter dated October 10, 1966, from R. A. Huggins, Principal Project Engineer, GE, to D. H. Kregg, B&R, previously referred to by Lari, was obtained from Lari and is attached hereto as Exhibit D. This letter states that the GE criteria on piping for the Emergency (Isolation) Condenser System originally outlined A-312 (seamless or welded pipe) or, as an alternate, A-376 (seamless pipe). The second paragraph of the letter states that the criteria mentions welded pipe as being acceptable for this application. Note that in the first paragraph, the designation A-312 is circled and the comment "A-358 welded for our sizes" added. When a copy of this letter was reviewed and the information in the first paragraph regarding the designation ASTM A-312 noted, Loeb stated that this letter was obviously in error, that the letter should have read Type ASTM A-358. Both Lari and Loeb then insisted that the pipe supplied by ATAPCO had been ASTM A-358. They both agreed that if the certifications for the material on file at B&R showed that this material was ASTM A-358, the question of the identity of the pipe would be cleared up.

84. Loeb was shown a number of shop plans prepared by Tubeco (obtained from site records) which designated the piping used as ASTM A-312, TP 316, welded schedule 80. Loeb stated that these shop plans had been prepared with the material designations imprinted thereon before the actual delivery of the pipe, and that they (Tubeco) apparently had elected to use them rather than prepare new forms.
85. On March 26, 1969 Carlson, Ryan and Tillou met with Huggins at the site to discuss further the handling of the change in the B&R specifications. Lari was also present.
86. Lari stated that there had been no formal documented change in the specifications. He stated he had received the letter dated October 10, 1966 from Huggins authorizing the use of welded piping. On the basis of this letter Lari stated he telephoned to Hutchinson, the Purchasing Agent at Tubeco, and informed him that rolled and welded pipe designated ASTM A-358 was acceptable. Lari stated that this telephone call was not subsequently confirmed in writing.
87. Because there are additional requirements in connection with the use of ASTM A-358 piping, such as 100% radiographic inspection of longitudinal seams, Lari was asked by Tillou whether Tubeco had been advised of these additional requirements. Lari answered in the affirmative and stated there were records available to verify this. Carlson informed the group that all the documents reviewed by CO to date identified the piping as welded ASTM A-312 (with filler metal), which by definition could not meet the specification of ASTM A-312. Neither Huggins nor Lari could account for this situation.

Further Investigation at Burns & Roe, Incorporated, Oradell, New Jersey

88. On March 26, 1969 Carlson, Ryan and Tillou reviewed records available at the office of B&R, Oradell, New Jersey. Representing B&R were Jack Brodsky, Quality Assurance Supervisor and Herb Jung, Quality Control Engineer.
89. Jung explained that a copy of the specification is sent out to prospective bidders. The successful bidder then receives a letter of intent followed by a formal purchase order.
90. Jung stated that the supplier of piping for the Cleanup Demineralizer System erected by Almirall-Doyle, was Hulco of Pasco, Washington. Jung stated that normally a change order in the specifications would be issued as an addendum to the specifications by letter to the contractor.
91. Jung did not have available purchase orders issued by Tubeco or by Hulco. He stated that these companies would have copies of the purchase orders they had issued.
92. Jung stated that Tubeco had obtained its pipe from Albert, which in turn obtained the pipe from ATAPCO.
93. Jung stated that he has the material certifications (test reports) for the piping spools supplied by Tubeco except for the elbows from Tube Turns. He stated that all piping from Tubeco came from ATAPCO and is designated A-312. According to Jung, ATAPCO supplied only stainless pipe to Tubeco. Jung stated that the material certifications from Hulco, although mailed by Hulco, had not yet been received at B&R.
94. Jung stated that he was attempting, through Tubeco, to get verification from ATAPCO that the stainless steel piping supplied to Tubeco was actually made to the ASTM A-358 specification and not ASTM A-312. Jung acknowledged that all the records available to him showed the pipe designation as A-312 not A-358.
95. Jung had available for review copies of the welder qualification records from Tubeco and from ATAPCO. These appeared to be in order and no questions were raised concerning them. Jung acknowledged that his efforts to get the material certifications from Hulco and confirmation from ATAPCO that piping supplied to Tubeco meets the specification ASTM A-358 had begun only within the last two or three days prior to the date of this review, that is March 26, 1969.

96. Jung stated after reviewing his records that although Tubeco and Bergen-Paterson were successful bidders and actually supplied pipe and pipe supports, no formal purchase order had been issued by B&R to either one of them. The work was performed solely on the basis of the contract signed between B&R and Tubeco, and B&R and Bergen-Paterson. Jung exhibited a copy of a letter dated September 27, 1966 to Tubeco from B&R confirming the verbal commitment made to Tubeco on September 19, 1966, in which Tubeco was advised of the acceptance by B&R of Tubeco's proposal of September 14, 1966 to furnish, fabricate and deliver piping in accordance with specification A-7299-60 and which concluded with the statement that this letter of intent shall be considered as authorization to proceed with the piping procurement and fabrication in advance of receipt of the formal purchase order.*
97. Lari was asked on April 29, 1969 to clarify whether B&R had done stress analyses on piping as suggested by Huggins in his letter to B&R dated October 10, 1966. Lari stated that B&R did not consider it necessary to rerun stress analyses at the time of the change in the specifications because B&R had previously determined allowable stress levels were the same for either type of pipe manufactured. Lari stated that this is what he intended to convey at the interview on March 26, 1969, not that no stress analyses had been performed.

Investigation at Tubeco

98. On March 28, 1969 Carlson, Ryan and Tillou visited Tubeco at 123 Varick Avenue, Brooklyn, New York. Also present were Lari, Jung and Avera.
99. Arthur A. Green, Vice President of Tubeco, exhibited a purchase order, number 36873D dated October 25, 1966, issued to ATAPCO by Albert (Exhibit B). Green identified Albert as an affiliate of Tubeco. According to the purchase order, delivery was to be made in eight to ten weeks. The order was for pipe designated ASTM A-312. According to Green, when delivery of the pipe was made, ATAPCO did not indicate that it had been welded with filler metal and therefore did not meet the ASTM A-312 specification. According to Green, discussions with GE and B&R centered on the delivery date and when he was informed that welded pipe would be acceptable, he was advised that 100% radiography would be required on the welded pipe. Green made available a copy of the purchase order referred to above. (Exhibit B).
100. Green produced copies of invoices from ATAPCO, which identified the piping supplied as ASTM A-312, Type 316 welded. Green stated that ATAPCO should have caught the error in the order it received and should have corrected the material specification to conform to ASTM A-358.
101. Green was asked to explain the designation of the pipe on the various Tubeco shop plans as ASTM A-312 welded. He stated that this was a repetition of a persistent error and that the forms should not have borne this designation.
102. Also present was Anthony F. Lopez, Assistant Manager for Engineering for Tubeco. He stated that he believed that GE had sent a quality control man, Don Tackett, to ATAPCO to inspect the radiographs of the seam welds.
103. Green exhibited a telegram dated March 27, 1969, which he had received from A. W. Galbraith, formerly President of ATAPCO. The telegram read, "Your letter received today. Will certify pipe manufactured to A-358 specification, instead of A-312. Papers will be mailed shortly." Green stated this telegram was in response to a letter he had sent to Galbraith on March 25, 1969 requesting that if in order, the certification for the material from ATAPCO be changed from A-312 to A-358. A copy of the telegram is attached hereto as Exhibit E.
104. The welding procedure qualification and welders qualification records were reviewed at Tubeco and were found to be satisfactory.

*Copy of letter from B&R to Tubeco, dated September 27, 1966 available in Region 1 files.

Investigations Conducted at Houston, Texas of Alloy Tube & Pipe Corporation

103. On April 2-5, 1969 John J. Ward, Investigation Specialist CO:IV, made an investigation into the financial status and manufacturing capability of ATAPCO.* Ward established that ATAPCO was acquired by Tube Associates Incorporated (Tube Associates), a subsidiary of Armco Steel Corporation. Another related company, Associated Steel Company, Inc., of Houston, was in the midst of acquisition by Armco Steel Corporation.
104. Ward established, through appropriate inquiry, that information concerning ATAPCO was not available in Houston, Texas. The inquiries were made through such agencies as General Services Administration, Small Business Administration, Securities and Exchange Commission, The Defense Contractors Administration Service Office of Defense Supply Agency, and the accounting firm of Price Waterhouse and Company. Another knowledgeable source contacted by Ward, the Market Research Manager of the Gulf Publishing Company, Tracy T. Word, had no knowledge of ATAPCO and was of the opinion that no local company could produce large diameter stainless steel extruded pipe.
107. Ward also obtained copies of the welding procedure qualification and welders qualifications from W. O. Strong, Jr., of Tube Associates and formerly General Manager of ATAPCO.
108. Ward stated in his memorandum that the only records available from ATAPCO in connection with the order from Albert for pipe installed at OC-1 are a list of purchase order numbers and accounting records pertaining to ATAPCO.
109. On April 8, 1969, John W. Flora, Senior Reactor Inspector, CO:IV, visited ATAPCO.** The purpose of the visit was to determine by way of discussion and visual observation the pipe manufacturing capability ATAPCO possessed in early 1967 when the CO-1 pipe was manufactured. The second purpose was to determine from observation of the equipment and shop practices whether ATAPCO could produce pipe of high quality. During the visit Flora obtained several procedures utilized by ATAPCO in the manufacture of pipe, some of which he considered as being deficient.
110. According to Flora, Associated Steel Incorporated, described as a sister firm to ATAPCO, handled all purchase orders, procurement of pipe and mill test reports for manufacturing done by ATAPCO. Flora described the equipment in the plant as not modern, but appearing to be equipment disposed of by others. Flora stated in his report that ATAPCO is not fully equipped to do physical testing. Its finished pipe is not protected by end caps. Flora stated he saw no evidence of supervision in the plant at the time of his visit, even though welding, forming and heat treatment operations were being conducted. He stated he observed pipe, 10" in diameter, schedule 40 with a wall thickness of 0.365 inches manufactured with filler metal, which was identified as A-312 pipe. Flora also reported that he had observed that after pickling and passivating, the stainless steel pipe was rinsed with city water from a garden hose with no control over chloride content of the pickle-passivate bath or the rinse water.
111. Flora stated that Strong, General Manager for Tube Associates, which had purchased ATAPCO, had stated that the plant is essentially unchanged from the condition it was in in 1967 at the time the OC-1 order was manufactured. Strong explained the relationship of Associated Steel to ATAPCO and that all paperwork had been taken care of by Associated Steel with no documentation going to ATAPCO.
112. Flora ascertained by questioning Strong that ATAPCO had only limited qualification to accomplish physical tests, no capability for doing chemical analyses and limited hydrostatic testing facilities. According to Strong, radiography was done by use of an x-ray machine and the radiographic films, according to Strong, would be available through Galbraith, formerly President of ATAPCO.

*Copy of report of investigation, dated April 14, 1969, available in Region I files and at CO:HQ.

**Copy of report of visit, dated April 25, 1969, available in Region I files and CO:HQ.

113. Flora ascertained from Strong that the plate from which the piping for OC-1 had been manufactured had been supplied by Eastern Stainless Steel Corporation, Baltimore, Maryland and Jessop Steel Company in Washington, Pennsylvania. Flora also ascertained that ATAPCO, at the time it manufactured the pipe, was certified to use the "U" and "PP" code stamps. At the time the order was being manufactured, ATAPCO was not certified to use the "N" code stamp.
114. Flora observed a pipe length, identified by Strong as scrap, marked "Alloy Tube and Pipe Corporation 6" S/40-P304 HT. 31594 welded A-312-A&P pipe." Five other pipe lengths observed by Flora, identified as not being scrap by Strong, had markings on two of the lengths as follows: "Tube Associates 10" S/40 P-304L welded A-312 A&P HT 78443." According to Flora, Strong contended that 6" diameter pipe had been welded without the use of filler metal. Strong acknowledged that filler metal had been used to manufacture the 10" diameter pipe even though its wall thickness, 0.365 inches, is less than the maximum ATAPCO could join without the use of filler metal, that is, 0.375 inch.
115. Flora made the observation that the manufacturing equipment at the ATAPCO plant appeared to predate the organization of ATAPCO in 1961. Flora was informed by Strong that the hydrostatic pressure gauges were calibrated by Hildebrand Engineers and the controls and recorders for the heat treatment furnace, by Honeywell Instrument Company. Ward had obtained and submitted with his report an affidavit by Strong, dated April 4, 1969, stating that to the best of his knowledge and belief, all requirements of A-358 had been complied with for the piping furnished to Albert under purchase order P368738. A copy of the affidavit by Strong is attached hereto as Exhibit F. We also submitted a copy of an affidavit dated April 4, 1969, signed by Galbraith, stating that although the referenced purchase order (P368738) called for A-312 welded pipe, the required wall thicknesses were such that A-358 was applicable and was in fact provided, that all requirements of A-358 had been complied with. A copy of the affidavit by Galbraith is attached hereto as Exhibit G. In addition, Ward obtained and submitted six copies of corrected test reports dated April 3, 1969 from ATAPCO, which identify the material as Type 316 A-358. A copy of these latter documents is attached hereto as Exhibit H.
116. By letter dated May 1, 1969, Lari submitted to CO eight copies of corrected test reports from ATAPCO dated December 12, 1966, January 21, 1967, March 16, 21 and 28, 1967, April 3, 1967 and two dated April 19, 1967. These are marked "corrected copy", the correction according to Jung, being the added reference to the wire, May 2, 1967 that all pipe material meets x-ray Code Case N-7 to ASAB 31 Section 1. The added information is in a type face different from the remainder of the information on the reports. Copies of these reports are attached hereto as Exhibit I.
117. Comparison of Exhibits H and I discloses that pages 1 and 2 of Exhibit I are for fittings and reducers and are not included in Exhibit H. The two sets of exhibits have been prepared on different letter heads, they bear different dates, they were typed on different typewriters, and the dates of the affidavits are different. It has also been observed that the affidavits on Exhibit H have been signed by A. W. Galbraith, those on Exhibit I by J. M. Spray. The notaries public who witnessed the signatures are also different. Exhibit H identifies the material from which the pipe was made as Type 316 A-358. Exhibit I identifies the material from which the pipe was made as Type 316 A-312 and the material from which the fittings were made as Type 316 A-403.

Investigation of Allegations Concerning Fittings

118. Cells had stated on March 11, 1969, that 6", 8" and 10" diameter fittings at OC-1 are suspect because nonqualified welders were used and no final testing or quality control on welding was done.

119. Cella had also stated on April 15, 1969, that he had been informed by Helmut Thielch, consultant to GE, that about five months ago an elbow with a 14" diameter and 1" wall thickness was supplied by Tubeco. It was found to be made of two pieces, one alloy and the other carbon steel. In a further discussion of fittings on that same date (April 15, 1969) Cella stated that Sweepco, which manufactured welded fittings, had no quality control program and that it did its own radiography of welds. It should be noted that these specific allegations regarding Tubeco and Sweepco were made subsequent to the visits to those companies (Tubeco on March 28, 1969, and Sweepco on April 2, 1969. The results of the latter visit are discussed in subsequent paragraphs).
120. Specification -60A is for pipe and fittings fabrication. In Part II, Technical Specifications, on page II-21, the fittings for the Core Spray System are specified as: "2 1/2" and larger - seamless, material and thickness same as pipe." (Seamless stainless steel ASTM A-312 or 376, TP 316; thickness - Schedule 80). The specifications for fittings are generally typical for all stainless steel systems. However, it should be noted, that according to Lari, when B&R was informed by Tubeco that A-312 seamless stainless steel pipe could not be supplied, verbal authorization to change the specification for pipe fittings from seamless to A-403 welded Type 316 fittings. Lari had interpreted the authorization contained in the letter dated October 10, 1966 from GE as a blanket authorization covering all stainless steel pipe and fittings for all systems, not just the Emergency (Isolation) Condenser System as stated in the letter.
121. The results of observations made regarding fittings during visual examinations of the installed equipment, made by representatives of CO and DRS during visits to the site on March 18-21 and 25-26, 1969, are discussed in the previous section of this report that deals with piping.
122. On March 26, 1969 Jung stated that the contract for piping and fittings for OC-1 had been issued to Tubeco. Tubeco issued a purchase order to Albert for the pipe and fittings. The piping was obtained from ATAPCO. ATAPCO also supplied 14" and 16" fittings.
123. Albert also issued purchase orders to Alaskan Copper Works (for elbows and reducers), Sweepco Tube Corporation (for elbows and reducers), Tube Turns (for elbows and tees) and Lenape Forge (for wyes).
124. On March 26, 1969, Jung made available the material certifications from Alaskan Copper, the supplier of 8" elbows and reducers. These certifications contain affidavits that the fittings meet ASTM A-403 requirements. Jung also had available as part of the material certifications from Alaskan Copper the reports of inspection of radiography which was performed by Pittsburgh Testing Laboratory on all welds of these fittings.
125. Jung also exhibited material certifications from Ladish, which contained all the required quality control and inspection information to confirm conformance with the A-312 seamless specifications. These material certifications were over a notarized signature. Ladish manufactured piping for the Cleanup Demineralizer System.
126. Because of the relatively large number of fittings it supplied and its proximity, Sweepco, 1 Clifton Boulevard, Clifton, New Jersey, was selected for the purpose of determining whether fittings supplied by it were in accordance with the B&R specifications. Albert had issued purchase order number B36873D dated October 25, 1966 to Sweepco for thirty-nine fittings, ten and twelve inches in diameter to be manufactured to ASTM A-403 TP 316 including 100% radiography. A copy of this purchase order is attached hereto as Exhibit J.
127. At the time of the visit to Tubeco on March 28, 1969, Green made available a copy of a certification from Sweepco dated March 27, 1969 certifying that the fittings had been manufactured using welding procedures qualified in accordance with Section IX of the ASME Boiler and Pressure Vessel code and by welders qualified under the same section. In addition, the welds were x-rayed 100%. A copy of this certification is attached as Exhibit K.

128. On April 2, 1969, Ryan and Tillou visited Swepeco in accordance with arrangements previously made with Jung, Avera, and Arthur Green of Tubeco, all of whom were present on this occasion. Swepeco representatives participating in the discussion were James Seme, Technical Director and Quality Control Manager and James Michie, Special Products Sales Manager.
129. A review of the Swepeco records concerning the manufacture and inspection of the fittings supplied under purchase order V-36873-D indicated that the Swepeco welding procedure number 200-16 dated May 31, 1963, met the ASME requirements for welding group PB (stainless steel) base metal. Swepeco welders are certified by the Swepeco Metallurgical Laboratory and X-Ray Department after an evaluation of a test specimen in accordance with the requirements of ASME code Section II. The employee who did the welding on this order, M. Soloway, was identified from shop records as the sole welder on the fittings fabricated for this purchase order. Records were produced verifying Soloway's certification for welding group PB materials by Tungsten inert gas method and by the consumable electrode manual arc method. Seme and Michie were unable to find a record of Soloway's certification to the combination method of welding under procedure 200-16. Soloway is no longer employed by Swepeco and is not currently included on records of certified welders.
130. All fittings manufactured by Swepeco under this purchase order were made from mill-cut segments purchased by Swepeco from G. O. Carlson, Incorporated of Thorndale, Pennsylvania in thicknesses of 11/16" nominal for the 12" fittings and 19/32" nominal for the 10" fittings. These segments were from the same heat of material and were accompanied by an affidavit covering the chemical and physical tests, which verified it to be ASTM A-240 CP 316 stainless steel plate as required by ASTM A-403.
131. The radiography of the welding on the fittings was done by the Swepeco X-Ray Department, which was certified September 24, 1963 as a qualified source for radiography by the Bureau of Ships, Inspector of Naval Materials to Military Standards 271A and NAV Ships 250-1500 specifications. The chief radiographer, William Contrino, is qualified to level II of American Society for Nondestructive Testing specifications for personnel qualification.
132. Heat treatment operations, in accordance with requirements for ASTM A-403 fittings, are accomplished in two semi-muffle batch type gas fired furnaces, each twenty-four feet long, four feet high and four feet wide. Each furnace has three zones individually controlled by thermocouples attached to strip chart recorders for providing permanent temperature records for each furnace charge. Furnace instrumentation and controls are calibrated semi-annually by Pyrometer Equipment Company of Kearney, New Jersey with equipment which is traceable directly to the National Bureau of Standards.
133. Forming of the mating halves of each fitting is accomplished by pressing the flat pipe segments between matched male and female dies. After this forming a 100% wall thickness inspection is accomplished using standard and deep throat micrometers to assure that the forming operation has not stretched any local areas below the minimum thickness tolerance allowed by ASA B16.9, that is, 87½% of nominal pipe thickness. The micrometers used for this inspection are calibrated periodically by Blanchette Metrology Laboratories of Clifton, New Jersey.
134. A review of random radiographic film covering the welds on representative fittings under this purchase order was made as follows: 12" 90°L - 5 films, 10" 90°L - 5 films, 10" 45° short radius L - 5 films, 10" to 8" concentric reducer - 2 films. These radiographs were all found to be better than average quality with good penetrameter images indicating sensitivity of better than 2% density, well within acceptable range, and resolution of the subject material excellent. The welds were smooth, uniform and showed good control of heat. They were entirely free of any irregularity in the root, undercutting, porosity or other objectionable defects. There were a few widely scattered, small (approximately 1/16") slag inclusions, though in all cases these were found to be considerably smaller than the size of non-aligned inclusions which are considered acceptable by the ASME code.

135. Sweepco has been approved as a qualified source for components manufactured to ASME code and ASA nuclear piping. Sweepco is also on the qualified vendors list for nuclear piping for the Naval Reactors Program and as a qualified vendor for Cryogenic Piping for NASA. A review of the formal Sweepco Quality Control Manual indicates it to be in full compliance to MIL-1-9858 and to include in addition to the general section covering scope, organization, titles, job responsibilities and authorities, detail shop procedures, inspection methods and equipment acceptance criteria, together with inspection record forms for every shop operation.

136. On April 29, 1969 when questioned regarding the allegations pointing to Tubeco, Jung informed Ryan that Tubeco had not manufactured fittings for OC-1 but that it may have manufactured what Jung described as nozzle tees. The nozzle tee was described by Jung and Lari as a length of pipe, one end of which is joined at a right angle by welding to an opening in another pipe.

Investigation of Allegations Concerning Valves

137. On March 11, 1969, Cella had informed Ryan and Tillou that B&R had bought used valves for use at OC-1, had them rebuilt by a Clifton, New Jersey firm and then had requested Cella, who owns Universal Testing Laboratories Inc. at Cedar Grove, New Jersey to test and certify the valves to specifications. Cella stated he had refused to do so and that the tests were subsequently done by an unidentified New York City testing organization.

138. On April 15, 1969 Cella was reinterviewed at his office in Dover, New Jersey by Robert W. Kirkman, Director, CO-1, Ryan and Tillou. Concerning the allegation that used valves had been procured and installed by B&R, Cella stated that an individual he knew in Clifton, New Jersey had approached him to have used valves bought by B&R from a New York supplier tested and certified for use. He stated the used valves were in the 6" and 8" sizes made of stainless steel. He stated that the prices paid by B&R for the valves were such that they could not have bought new material.

139. On April 16, 1969 in a telephone conversation, Cella informed Ryan that he had been informed that B&R had bought about \$60,000 worth of stainless steel valves in sizes 1/2" up to 2" from Bergen, East Paterson, New Jersey. Cella stated that according to his informant, Bergen had obtained the valves from Metropolitan, Long Island City, New York, characterized by Cella as a dealer in surplus junk valves. He stated that Metropolitan could not supply any certification for these valves. Cella was questioned about his previous statement concerning 6" and 8" valves. He stated he had no specific information that the used valves were among these sizes.

140. In another telephone conversation with Ryan on April 17, 1969 Cella stated that the valves in question were 1/2" to 4" in size and were of different materials, that is, stainless steel, carbon steel, brass and bronze. He also provided specifics as to the B&R purchase order numbers (to Bergen) and specific item numbers for the identification of the valves. Cella stated that the B&R specifications called for new materials whereas they received reconditioned, used surplus valves. He stated that the prices paid for the valves by B&R were the catalog list prices for new materials.

141. In the earlier interviews with Lari, Jung, and Loeb, in the period March 18-27, 1969, the AEC representatives were informed that no used valves were installed in Class 1 systems at OC-1.

142. The B&R specifications under which valves were procured for OC-1 include S-2299-55 and -61, both of which are dated February, 1966. The former specifications speak to valves for the Turbine Building, the latter to valves for the Reactor Building. Specification 61, Section III, General Requirements, paragraph 18, Materials, states "unless otherwise specified, all materials and equipment shall be new and the best of their several kinds in quality." This same statement is included in specification 55.

143. Under Section II, paragraph 3, Materials, the following is set out: "ASTM specifications for materials appearing herein for each valve shall be considered minimum requirements." Under Section II, paragraph 5, Testing and Quality Control, the following appears: "All valves shall be shop hydrostatically tested in accordance with applicable standards. The bidder shall detail inspection and testing procedures used on each class of valves, where applicable, as follows: Magnetic particle inspection, dye penetrant inspection, radiography, hydrostatic testing and air testing."
144. On April 18, 1969 an appointment was made through Avers to inspect records available at B&R, Oradell, New Jersey, pertaining to the procurement of valves. Avers could not be present and in his stead had Ray Zogram, the representative of MPR Associates, Washington, D. C., consultants retained by JC.
145. Jung stated that a purchase order BR-2299-96B had been issued to Charles F. Guyon, Incorporated, 522 Fifth Avenue, New York City on August 25, 1966. B&R, according to Jung, had procured valves for the Liquid Poison System directly from Anchor Valve Company, William Powell Company, Velan Valve Company and Pacific Valve Company. Valves in the Isolation Condenser System were procured directly by B&R from Anchor, Velan and the Ohio Injector Company.
146. Certifications made available to Ryan by Jung from Velan, Anchor, William Powell and Pacific Valve included the results of the chemical and physical analyses, the magnetic particle liquid penetrant and hydrostatic tests, as applicable, or certifications that the valves had been manufactured from materials that had been tested in accordance with standard commercial practice and that inspection records, material certifications, physical and chemical reports are on file and available for examination.
147. Jung also produced certifications dated August 19, 1968 from Dresser Industrial Valve and Instrument Division, Alexandria, Louisiana to Charles F. Guyon, Incorporated stating that valves furnished to Guyon on an identified purchase order had been inspected and tested and found to be in accordance with the specifications, drawings and requirements of the order. The valves covered by the certifications from Dresser appeared on B&R purchase order numbers 164, 177 and 304. These purchase orders, when shown to Ryan by Jung, were found to have been issued to Bergen, 14 Stefanie Avenue, East Paterson, New Jersey. On April 18, 1969 Jung had produced four purchase orders to Bergen, numbers BR-2299-164, 177, 304 and 338. Copies of these purchase orders are attached hereto as Exhibits L-1, -2, -3 and -4. Jung explained that Guyon had been a subvendor to Bergen as well as being a vendor to B&R under purchase order BR-2299-96B.
148. Jung and Zogram identified five stainless steel valves on the Bergen purchase orders, as follows: Item 301, 392, 395 and 396. Item 301 appears on purchase order number 164 and items 392, 395 and 396 appear on purchase order number 177. Items 418 and 419 on purchase order number 304 covered 10 and 8 valves, respectively, in the Isolation Condenser System and the Recirculation System.
149. Except for the certifications from Dresser to Guyon, dated August 19, 1968, and a certification from Welworth, dated August 13, 1968, Jung was unable to produce certifications covering the remainder of the valves obtained by Bergen under purchase order numbers 164, 177, 304 and 338.
150. Jung explained that the specifications for valves did not require certifications nor had this requirement been included in the purchase orders. Jung stated that certifications were requested in 1968 after the orders had been filled. Jung stated that certifications or certificates of conformance had been received from most of the valve vendors except Bergen, which had submitted certificates for only part of its order.

151. Jung was requested to arrange a visit to Bergen to inspect its records and to identify the sources of supply used by Bergen. This visit was scheduled for Tuesday, April 22, 1969. The contact at Bergen was Mrs. Mary F. Hilla.
152. On April 22, 1969, Ryan and William J. Collins, Metallurgical Engineer, Technical Support Branch, CO-HQ, met with Jung and Zogram at 14 Stefanic Avenue, East Paterson, New Jersey. Mary F. Hilla identified herself as the estimator and order clerk for Bergen. She stated that contrary to her expectations, when she first received the B&R purchase order, she learned that the delivery dates had been moved up and instead of having three to four months procurement time, it was reduced to a matter of weeks. Under these circumstances, according to Hilla, the valves had to be obtained from many different sources. Hilla stated that on purchase orders 164 and 177, Bergen had issued a purchase order to Charles F. Guyon, Incorporated. She exhibited certifications from Dresser Industrial Valve and Instrument Division, Alexandria, Louisiana, which were duplicates of those previously reviewed at B&R on April 18, 1969. She also had a copy of the certification from Walworth dated August 13, 1968.
153. Hilla stated that Bergen had been in business only 3½ years. It had started by buying materials from jobbers, but now acts as a distributor for recognized valve manufacturers. She stated that Bergen maintains an inventory on stainless steel valves. She stated that certifications are not obtained for stock valves, but are obtained only if requested in the purchase order. Hilla stated that valves manufactured by Jenkins, Walworth, Crane and Fairbanks are, according to statements in these companies' catalogs, manufactured to conform to ASTM specifications.
154. Hilla stated the records for 1967 were not immediately available because they had been retired to the basement for storage. She had copies of the purchase order numbers 164, 177, 304 and 338. She did not have available the purchase orders issued by Bergen to its vendors, but identified the suppliers from notes made on the B&R purchase orders. Hilla identified the vendor and the valves it supplied by item number as shown on the B&R purchase order. All diaphragm valves had been procured from the Grinnell Company. On purchase order 304, Hilla identified items 276, 321, 416, 418, 419, 420, 421, 422 and 423 as having been procured from Metropolitan.
155. Hilla stated that when Bergen had been requested by B&R to obtain certifications, she had asked the various vendors to comply. She obtained certificates from Guyon and from Grinnell, but was unable to get certifications from the company identified as Aloyco or from Metropolitan.
156. Hilla stated she did not have a copy of the B&R valve specification numbers 55 and 61. She stated it was her understanding that all valves were to be new, that she had ordered valves with the understanding they were to be new valves and she further stated that all valves delivered were new valves. Bergen, according to Hilla, did no tests on the valves because it has no facilities for doing any testing. She stated that only one valve in the order had to be replaced either because it was the wrong valve or because it had been damaged in transit. It was item number 370, supplied by Guyon. She also identified item 276 as valves that were reworked by Metropolitan to change the flanged ends to butt weld ends as ordered by Bergen.
157. Hilla agreed to get all the purchase orders issued by Bergen to fill the B&R order together with the purchase order numbers, the names of the vendors and the identification of the valves they had supplied. An appointment was made for Tuesday, April 29, 1969 for this purpose.
158. After leaving Bergen, it was agreed among Jung, Zogram, Collins and Ryan that a visit then be made to Metropolitan located at 50-09 Second Street, Long Island City, New York.
159. Metropolitan is located in a former power generating station which covers most of the block between 50th and 51st Avenues and Second and Fifth Streets in Long Island City, New York. What was formerly the main entrance to the building is blocked off and visitors are directed to obtain entry through the yard, the entrance to which is on 51st Avenue, near Fifth Street. The yard, an open fenced area, measuring

approximately 75' by 100', is filled indiscriminately and haphazardly with various pieces of piping, valves, reducers and similar equipment, all of it appearing to have been used. Inside the building, valves of various sizes and in various stages of assembly were lying about. There were several pieces of machinery, grinders, lathes and so forth and a number of bins for smaller sized valves.

160. Two men met the visitors and identified themselves as Bill Kane and Bob Kane, principals of the Metropolitan Corporation. Bob Kane stated he was Secretary of the corporation and Bill Kane, he stated, is the President.
161. Bill Kane stated he recalled that valves were sold to Bergen "a couple of years ago", but he would not be able to find the records without the purchase order numbers. Bill Kane was asked if the firm sold stainless steel valves. He then showed a compartment containing stainless steel valves in various sizes. When asked if these were new valves, he replied that the firm buys new, surplus valves and resells them. When asked if used valves were sold, he stated that the valves are inspected, reconditioned if necessary, but no certificates are issued. When Kane was asked to define surplus valves, he replied that he meant the same as the questioner did, saying that "surplus is surplus." Bill Kane stated the valves had been bought from various construction sites where they were surplus and he believed it was possible that he had bought valves from B&R, Consolidated Edison and other construction sites. He stated that in many instances the surplus valves had been exposed to weather and needed painting.
162. Bob Kane stated that Metropolitan does not buy from manufacturers of valves. He stated that it purchases used and surplus, unused valves. If needed, the valves are reconditioned. Bob Kane stated that the valves are hydrostatically tested for twice the pressure they are designed to hold. The only warranty given, according to Bob Kane, is that if the valve fails to meet the pressure stated, a replacement valve will be furnished. Bob Kane also stated that no certificates of quality assurance are issued.
163. In appearance, the yard and shop of Metropolitan is, as described by Cella, a "junk shop." As stated previously, valves of various sizes are piled about primarily separated according to body material, that is, brass, stainless steel, bronze or carbon steel. They are also separated as to size and are either in bins, storage compartments or out on the floor. Those observed appeared to be weathered and used, in many instances showing signs of surface rust. Bill Kane pointed out some of these and described them as new, surplus valves. Bob Kane challenged the visitors to distinguish between rebuilt or reconditioned valves and those designated as new. He pointed out that some of the rusted valves were actually unused surplus and some painted and in clean condition were actually reconditioned, used valves.
164. On April 29, 1969, in accordance with the appointment previously made with Hilla, Avera, Jung and Ryan again visited Bergen to obtain additional information concerning procurement of valves for OC-1.
165. Hilla stated she had been unable to find all of the records pertaining to the B&R purchase orders and had only a copy of a purchase order number 26261 dated July 14, 1967 issued by Bergen to Metropolitan for six 10", 300 pound check valves, butt weld, seat and disc stellite, 13% chrome trim, list price \$1,096 each, discount 38/20. Hilla explained the discount is 38% if the bill is paid within 20 days. She also produced two invoices from Metropolitan to Bergen: one, number M32060, dated July 28, 1967 for one 10" Crane, serial 30 cast steel, butt weld end swing check valve, list \$1,096, discount 38/20, net \$543.62; the other, number M32066, dated July 31, 1967 for two 10" Crane, serial 30, cast steel, butt weld end swing check valves, list \$1,096 (\$2,192) discount 38/20, net \$1,087.23. Both these orders were received August 3, 1967.
166. Hilla also stated that item 399 on purchase order 177 for four 2" gate valves, socket weld ends, group number XI-D had been procured from Metropolitan.

167. Hilla stated that she believed the first inquiry about valves came from a Mr. E. J. McCarthy of B&R, on May 25, 1967. (This date appears on purchase order 164). When page 5 of this purchase order was shown to Hilla, she had no explanation for two dates thereon, May 24, 1967 and May 26, 1967, which appear to be delivery dates which would indicate inquiries by B&R prior to May 25, 1967.
168. Hilla stated the first inquiries were by telephone to Cornelius Calandriello, identified by her as the secretary of the Corporation (Bergen). Hilla stated she was given the order to fill and she telephoned various valve manufacturers, but found the delivery time ranged from four months to ten months. She stated she was then informed that an earlier delivery date had to be met. She then ordered the valves through jobbers such as Cuyon, A&A Stainless and Ray Miller. Hilla stated that she found Metropolitan in the classified directory. Hilla stated she did not know whether B&R had furnished the specifications to Bergen, but stated she had not seen them at any time. She stated that she obtained a copy of the quotation compiled by Cuyon and details of the specifications from McCarthy of B&R, to give to the vendors. She again stated that new material had been specified and as far as she was aware, new material had been ordered and delivered.
169. Hilla was informed that Metropolitan officers had identified the firm as a surplus yard. She then stated that Metropolitan may have delivered new, surplus valves, but she was sure they were not used valves. She stated the prices paid were for new material with the standard discount of 38% for payment within 20 days. She again stated that certification had not been requested because none had been requested by B&R at the time they had placed the order with Bergen. Hilla stated she had first been requested to obtain certification some time in October, 1968 and had been successful in getting them only from Cuyon and from Walworth.
170. Hilla stated she had been unaware that the valves were for use in a nuclear reactor, that the place of delivery (Oyster Creek) did not mean anything to her because she was not aware that a reactor was being built there.

Meeting With GE Personnel

171. On April 29, 1969 after leaving Bergen, Ryan went to B&R at Oradell, New Jersey to get copies of the original material certifications supplied to B&R by ATAPCO and to ascertain whether B&R had done stress analyses, as suggested in the letter from Huggins, GE, dated October 10, 1966. Avers and Jung, who had been at Bergen with Ryan, also returned to Oradell. Avers and Ryan traveled together. During the trip Avers informed Ryan that Loeb was at Oradell but that Avers did not think they would see him. At B&R, Jung was unable to find a conference room available and suggested that he, Avers and Ryan could use the office of Lari. In Lari's office at the time were Lari, Huggins, and Loeb. Lari then located a conference room and Huggins, Loeb and Lari joined Avers, Jung and Ryan.
172. Huggins asked what CO had found regarding the valves. Ryan informed him that through Bergen CO had confirmed the procurement of valves from Metropolitan including some for use in the Core Spray System, that Metropolitan had informed Jung, Collins, Zogram and Ryan that it dealt in surplus and reconditioned valves and did not give material certifications. Huggins was also informed that the only test on the valves performed by Metropolitan was a hydro test. Ryan also informed Huggins that Hilla of Bergen had identified valves on purchase orders 177 and 304 as having been procured from Metropolitan. Huggins asked wherein B&R had not met its specifications or the applicable codes. Both Lari and Jung stated they believed B&R had met the code requirements and were not aware that the specifications had not been met. Huggins stated he did not think the use of used valves is in violation of the codes.
173. Jung consulted a copy of the ASTM Code and stated that it required only markings on the valve bodies of cast steel valves of the name of the manufacturer, the heat number and the pressure of the valve. He stated that stainless steel valves require a certified record of chemical analysis. When Ryan asked about the B&R specification requirement for new material, Huggins stated this requirement is waivable.

174. Lari then called in an engineer and with the concurrence of Loeb and Huggins requested him to identify all valves in the system. Lari requested the engineer to report his findings to him as soon as possible.
175. Huggins then informed Ryan that GE planned to run tests for chemistry and possibly ultrasonic testing on all questionable valves, that is, those for which there were no material certifications. Huggins stated the valves would be torn down, that the vendor representative would be called in to assist in establishing the reliability of the valves. Huggins stated the vendor representative would not be from Guyon or Bergen but would be from the original manufacturer of the valve. Huggins then stated he saw no problem with surplus valves if they had not been used before. Avera subsequently told Ryan that he had talked to Huggins afterward in Lari's office. Avera stated he pointed out to Huggins that surplus, unused valves could be unacceptable if shop worn or if exposed to heat from a fire. According to Avera, Huggins agreed with these comments.
176. Lari was questioned about the procurement procedures in connection with OC-1. He stated that 95% of the procurement was done by the projects, the remainder by the Purchasing Department. Lari stated that the project people had selected manufacturers of valves such as Anchor, Walworth, Crane, Pacific, and Valen. In some instances he stated the manufacturer requires B&R to deal with a supplier rather than directly through the manufacturer.
177. Lari stated that Bergen was not among the suppliers selected by the project people. Lari stated this firm had been contacted by the people in purchasing. Lari was unaware of any reason for shortening up the delivery time in the spring of 1967. He said there was no immediacy at the site at that time. He stated that this may have been a policy of the purchasing people to expedite delivery of equipment and material to the site by indicating a short delivery period. Lari stated he did not know who at B&R had initially communicated with Bergen. L. J. Persbacker and E. J. McCarthy, who were in the Purchasing Department in 1967, are no longer with B&R.
178. Lari was unable to confirm that Bergen had received copies of B&R specifications 55 and 61. Lari stated he had not communicated with this firm nor had he sent it the specifications.

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JUN 10 1969

Roger S. Boyd, Assistant Director for Reactor Projects
Division of Reactor Licensing

OYSTER CREEK PIPING PROBLEMS

The enclosed memorandum from our Region I (Newark) office is forwarded for information. This memorandum provides supplementary information to our interim reports dated May 2 and May 12, 1969, of our investigation into the allegations made relating to certain pipes, fittings, and valves at the Oyster Creek facility. A complete report of our investigation is in final preparation and will be forwarded shortly.

I have enclosed a copy of the revised draft of our position on these problems. This position incorporates the substantive comments received from RDT during the DRL-CO-RDT meeting at Germantown on May 23, 1969.

Your particular attention is invited to the fact that the source of the information, in the Region I memorandum, related to Palisades, Quad Cities, and Browns Ferry should be maintained in strict confidence and not be disclosed outside the regulatory organization.

Original issued by
R. H. Engelken

R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

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9 PDR

Enclosures:

- 1. Memo, 5-20-69,
CO:I to CO:HQ, OUC
- 2. Draft, 5-26-69, OUC

cc w/encls:

- M. M. Mann, DR
- P. A. Morris, DRL
- L. D. Low, CO
- E. G. Case, DRS
- F. Schroeder, DRL
- S. Levine, DRL
- D. J. Skovholt, DRL
- L. Kornblith, CO

BCC: R. T. Carlson, CO:I, w/o encls.

OFFICE	CO:RI&E JK	<u>OFFICIAL USE ONLY</u>	CO:RI&E JPO Reilly	CO:ADI&E RHE HEngelken
SURNAME	JKoppler:ej:ouu		JPO Reilly	HEngelken
DATE	6-9-69			6/9/69

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Roger S. Boyd, Assistant Director for Reactor Projects
Division of Reactor Licensing

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R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

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- F. Schroeder, DFL
- S. Levine, DFL
- D. J. Skovholt, DFL
- L. Kornblith, Jr., CO

*Retyped to a 2 d.
last paragraph. (unoffsted
by L. D. Low*

6-9-69

bcc: R. T. Carlson, CO:I, w/o

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OFFICE ▶		CO:R Jeppler:ej	CO RHE
SURNAME ▶		JPO:Reilly	RHEngelken
DATE ▶		6/6/69	6/6/69



A O'Reilly

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545
June 6, 1969

Roger S. Boyd, Assistant Director for Reactor Projects, DRL

OYSTER CREEK MEETING -- PIPING, VALVES AND FITTINGS - DOCKET NO. 50-219

A meeting was held on May 14, 1969, with representatives of Jersey Central, General Electric, Burns and Roe and MPR to discuss the status of the investigation of the Oyster Creek piping, valves and fittings. The meeting was in the nature of a progress report prior to submittal of a formal report in response to the letter from Dr. Morris to Jersey Central dated April 29, 1969. A list of attendees is attached.

At the start of the meeting, John Barnard stated that they were not asking for any approval action at this time, but invited comments that could be included in the forthcoming report.

John Omer (GE) structured the piping investigative program and has been responsible for all these activities. The investigation included study of existing records on piping, valves and fittings supplemented by onsite inspection. In cases where records were not found we understand that the results of the inspection would be used to identify (with reasonable confidence) the pedigree of the components in question. It became apparent to me that GE had made serious efforts to perform a reasonably comprehensive investigation. The results of the investigative program are not complete; however, they do appear promising with regard to the identification of the piping reviewed. Although much investigative work by GE has been done on pipes and fittings, additional inspections may be necessary.

The valve problem requires more investigative work. The certification of many valves may never be accomplished due to purchase sources, and the lack of records. Indirect methods will have to be employed to obtain reasonable assurance regarding valve certification. GE was aware that additional work would be necessary.

Two points were brought out at the meeting by Compliance regarding the problem. These are (1) evidence will be necessary to support the extent of the investigation considering that only three systems were identified that contain suspect piping; i.e. (a) core spray, (b) emergency condenser and (c) shutdown cooling; and, (2) we are being asked to consider piping that does not meet any specific code. Additional inspections may be necessary to satisfy these concerns.

General Electric indicated it expects to submit a report in about two weeks. Action by DRL will be necessary about this time to permit power operation by about mid-June. DRL and CO will need to meet on this matter soon.

A brief discussion was held regarding air leakage from main steam line isolation valves. Don Willett (GE) indicated that by further exercising

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OR 6/10/69
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LZR
LZ
HGC*

Roger S. Boyd

- 2 -

June 6, 1969

the valves, the measured leak rate had been reduced to a value within that stated in Amendment 11, i.e., 1%/day of the total allowable where the total proposed by GE was 5%/day.*

Interpolation within the current technical specification limits suggest 5%/day of the allowable leakage rather than the 30% total number. If this is so, it would appear to be the same value as we are permitting for Nine Mile Point; however, suitable documentation and analyses are required before any conclusion may be made.

R. L. Tedesco

R. L. Tedesco, Chief
Reactor Project Branch 2
Division of Reactor Licensing

Attachment:
List of Attendees

Distribution:

Docket File
DRL Reading
RFB-2 Reading
P. A. Morris
F. Schroeder
S. Levine
R. DeYoung
Branch Chiefs, DRL
CO (2)
J. O'Reilly
A. Bromerick
V. Stello
H. Steele
Attendees, AEC

* We asked GE if it was considering any other action to reduce valve leakage at this time. Messrs. Barnard and Willett stated that they believe that with valve exercising, the leakage had been reduced significantly and therefore further action is not presently considered necessary. We will need to show that the measured leakage at any time was always less than the 0.05x allowable (total). If the stated leakage was obtained after repeated valve actuations and the leakage could be above the proposed, then we have a problem. Even though the total allowable leakage through testable valves and penetrations is stated to be $0.3L_{t0}(20)$ in the specs, it was not inferred that such leakage should bypass the secondary building and filter systems. In my opinion, GE's interpretation that it meets the spec via leakage through the steam valves cannot be accepted. Modifications may be necessary to assure that leakage through valves is less than $0.05L_{t0}(20)$, before power operation. Action after power operation would be difficult, if not nearly impossible. The foregoing are my personal comments on the Main Steam Isolation Valves. We place heavy reliance on these valves for low risk to the health and safety of the general public. With the advent of many BWR plants, prompt and direct DRL action is warranted.

JERSEY CENTRAL POWER & LIGHT COMPANY

MEETING ATTENDANCE

MAY 14, 1969

AEC

M. M. Mann, DR
J. C. McKinley, ACRS
F. Schroeder, DRL
R. S. Boyd, DRL
S. Levine, DRL
V. Stello, DRL
R. L. Tedesco, DRL
J. R. Sears, DRL
A. W. Dromerick, DRL
M. Wetterhahn

Jersey Central

G. H. Ritter
D. R. Rees
G. F. Trowbridge
B. G. Avers

General Electric

D. K. Willett
R. A. Huggins
J. Bernard
J. Omer
D. E. Pactitt
H. D. Powell
R. A. Dieterich
R. V. Poe

AEC - CO

L. D. Low
L. Kornblith
R. H. Engelken
J. P. O'Reilly
J. Keppler
A. F. Ryan
R. T. Carlson
W. J. Collins
G. W. Reinmuth
R. A. Lofy (Parameter, Inc.)

AEC- DRS

R. M. Gustafson
A. B. Holt

MPR Associates

N. M. Cole
R. N. Zogran

Burns & Roe

G. A. Leri



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

JUN 2 1969

File

THRU: J. P. O'Reilly, Chief, Reactor Inspection
and Enforcement Branch
Division of Compliance

REQUEST BY A. A. CELLA FOR MEETING WITH REGULATORY ON B31.7 NUCLEAR
PIPING CODE

During a telephone conversation with Bob Carlson on May 9, 1969,
Mr. A. A. Cella expressed a desire to meet with representatives of
the regulatory staff to discuss the requirements of the Nuclear
Piping Code B31.7. This request was transmitted to CO:HQ in
Carlson's memo to O'Reilly dated May 9, 1969.

On June 7, 1969, I informed Carlson that Cella's request had been
considered by CO and DRS and that it was decided that any contacts
between Cella and the regulatory staff at this time should not involve
Compliance. Carlson agreed with this position. I asked Carlson
to inform Cella that regulatory did not have any interpretation of
the requirements of B31.7, since we do not require B31.7 at this
time. If this response was unsatisfactory to Cella, I suggested that
Carlson tell Cella to feel free to contact Ed Case for additional
information.

J. G. Keppler
J. G. Keppler
Senior Reactor Inspection Specialist
Division of Compliance

cc: R. T. Carlson

JGK:cim

8304070320 690610
PDR ADOCK 03000219
PDR
Q



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
670 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645 3944

May 9, 1969

J. P. O'Reilly, Chief, Reactor Inspection & Enforcement Br.,
Division of Compliance, Headquarters

REQUEST BY A. A. CELLA FOR MEETING WITH APPROPRIATE REPRESENTATIVES
OF AEC TO DISCUSS REQUIREMENTS OF NUCLEAR PIPING CODE B31.7

During a telecon with Alexander A. Cella, President, Pipeco Steel Corporation, Dover, N. J., on May 9, 1969, made for the purpose of obtaining additional specifics pertaining to certain allegations made previously by Mr. Cella relating to piping, fittings and valves being supplied to the nuclear industry, Mr. Cella indicated a desire to have a meeting with appropriate representatives of the AEC to discuss the requirements of the Nuclear Piping Code B31.7. Specifically, he would like to determine just what is the AEC's interpretation of the subject code. With this information, he could then advise prospective purchasers accordingly. He was advised that his request would be given consideration and that he would receive an answer in the near future.

Aside from the possibility that Mr. Cella may be primarily interested in obtaining an AEC endorsement of his product, such a meeting might be quite productive and informative, judging from previous contacts with him. It would be interesting to say the least. I would suggest that we have such a meeting, that it be held at Pipeco, and that the AEC representation be limited to a few key representatives from REG, i.e., a knowledgeable spokesman from DRS and one or two from CO (Headquarters and Region I). CO:HQ should decide whether the General Manager should be represented; however, it would seem that to do so at this point might be premature. With regard to the endorsement aspect, our policy in this area could be made clear to him at the outset of my followup contact. His reaction would provide guidance on setting up the meeting.

R. T. Carlson
R. T. Carlson
Senior Reactor Inspector

8304070331-690610
PDR ADOCK 05000219
PDR

R. F. Fraley
Executive Secretary, ACRS
1034 H Street

RE: JERSEY CENTRAL PIPING ALLEGATIONS

Enclosed for your use are 18 copies of a letter from the State of New Jersey to our Region I (Newark) Compliance Office concerning the subject allegations. These copies were requested by M. Gaske of your staff on May 21, 1969.

Enclosure:
Ltr dtd 2/21/69 (18)

bcc: F. Nolan, w/encl
G. Reinmuth, w/encl

Original signed by

R. H. Engelken, CO

5/22/69

NOTE: THE FOLLOWING WAS HANDWRITTEN BY RHE ON THE ORIGINAL AND IS TYPED FOR INFO PURPOSES ON ALL COPIES BUT THE GREEN:

"Ray, Please note that this letter (2/21/69 enclosure) has not been given to the Public Document Room. It is being kept confidential within the Commission. RHE"

c.j

1104070334 690610
PDR ADOCK 05000219
G PDR

OFFICE ▶	CO in	CO			
SURNAME ▶	FNolan: [initials] JPO'Reilly	RHEngelken			
DATE ▶	5/22/69	5/23/69			



State of New Jersey

DEPARTMENT OF HEALTH

JOHN FITCH PLAZA, P.O. BOX 1540, TRENTON, 08625

February 21, 1969

Robert Kirkman, Esq.
Division of Compliance, Region I
United States Atomic Energy Commission
960 Broad Street, Room 806
Newark, New Jersey

Dear Mr. Kirkman:

Refer to: (1) USAEC Docket 50-219;
(2) NJPUC Docket 652-60.

On Thursday, February 13, 1969, Messrs. A. A. Cella and P. E. Kiebler met Commissioners R. T. Byrne and A. J. Grossi of the Public Utilities Commission and W. Gural, Esq., Deputy Attorney General for the Department of Public Utilities. These gentlemen are officers of PIPECO Steel Corporation, East Dickerson Boulevard, Dover, New Jersey. They stated an allegation which I now transmit to the AEC via your office for consideration and action in keeping with the public interest. I am doing this in my capacity as Vice Chairman of the New Jersey Atomic Energy Council.

The officials of PIPECO advised Mr. Gural their corporation refused to supply pipe to Jersey Central Power and Light Company for use in the Oyster Creek Station Number One since it did not meet appropriate specifications. They further stated, they have learned another firm (not identified) supplied the piping which meet ASTM-A-312 F.M. standard. Mr. Cella and Mr. Kiebler opinioned the use of filler was objectionable and led to a reduction in quality not allowable for a nuclear power station.

I trust you will advise New Jersey as to your actions and findings in this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "Roscoe P. Kandle".

Roscoe P. Kandle, M.D.
Vice Chairman
New Jersey Atomic Energy Council

8304070284-690610
PDR ADOCK 05000219
G PDR

EXHIBIT A

FEB 28 1969



ALBERT

PIPE SUPPLY CO., INC.
101 VARICK AVENUE
BROOKLYN, N.Y. 11237
212 HY 7-4900
CABLE "PIPESUPPLY"

PIPE VALVES FITTINGS

PURCHASE ORDER

TO Alloy Tube & Pipe Corp.
PO Box 9429
Houston, Texas 77011
Att: Mr. Bill O'Rear

S Tubeco, Inc.
H 123 Varick Ave.
I Brooklyn 37, N.Y.
P
T
O

DATE 10/25/66	F.O.B. POINT as noted below	TERMS 1/2-1%-10- net 30 days	P36873 D AP
SHIPPING INSTRUCTIONS best way		DATE WANTED 8/10 wks. RUSH	THE ABOVE ORDER NO MUST APPEAR ON ALL INVOICES & SHIPPING PAPERS & REFERRED TO IN CORRESPONDENCE
<input type="checkbox"/> PACK FOR EXPORT SHIPMENT	<input type="checkbox"/> SHIP IN OUR NAME	<input type="checkbox"/> PARTIAL SHIPMENT ALLOWED	<input type="checkbox"/> SHIP COMPLETE ES/CC

QUANTITY	DESCRIPTION	PRICE
CONFIRMATION		
TAG: JOB 609600 - ALL ITEMS - TAG PIPE: REQ. T1996		
Item 1 14 ft. 0"	22" OD Sch. 80 (1.125W) st. steel pipe, weld A&P cut to exact lgth. + or - 1" ends bev. for welding std. ASA bevels (appr. 276¢/ft) + 100% radiography	Week 1/97th mid to late Feb 3/10
Item 2 33' 0"	15" OD Sch. 80 (.843W) ditto + 100% radiography	3/10
Item 3 18' 0"	14" OD Sch. 80 (.750W) ditto + 100% radiography	3/10
Item 4 200'	12-3/4" OD Sch. 80 (.687W) ditto + 100% radiography	3/15
Item 5 220'	10-3/4" OD Sch. 80 (.593W) ditto + 100% radiography	3/20
Item 6 250'	8-5/8" OD Sch. 80 (.500W) ditto + 100% radiography	3/20

NOTE: ON DELIVERY TO OUR CUSTOMER PLEASE FORWARD US SHIPPING DATE AND ROUTING.

4/15
Helen King
4/13
EXHIBIT B (1 of 2 pages)
will ship complete
3/24
3/27
3/16



ALBERT

PIPE SUPPLY CO., INC.
101 VARICK AVENUE
BROOKLYN, N. Y. 11237
212 NY 7-4900
CABLE "PIPESUPPLY"

VALVES PIPE FITTINGS

PURCHASE ORDER

TO ALLOY TUBE & PIPE.

SHIP TO

PAGE TWO

DATE	FOB POINT	TERMS	236873 <input type="checkbox"/> AP
SPECIAL INSTRUCTIONS		DATE WANTED	PLEASE ABOVE ORDER NO MUST APPEAR ON ALL INVOICES & SHIPPING PAPERS & REFERRED TO IN CORRESPONDENCE

PACK FOR EXPORT SHIPMENT PARTIAL SHIPMENT ALLOWED SHIP COMPLETE

SHIP IN OUR NAME **ES/CC**

QUANTITY	DESCRIPTION	PRICE
	<p>Note: on Radiography- see code case N-7 to ASA B-31 Sect. 1 A312 100% radiographed Above pipe FOB Houston, Texas</p> <p>TAG: FITTINGS: REQ. T-1998</p>	
Item 7 (2)	16" Sch. 80 (.843) LR 90 deg. weld ellipse ASTM A403 (includes 100% radiography) T316 St. Steel with ends bev. for welding, std. ASA bevels	
Item 8 (2)	14" Sch. 80 (.750) ditto	
Item 9 (2)	16" Sch. 30 (.843) x 10" Sch. 80 (.593) eccentric weld reducers ditto specs.	
	Above fittings FOB delivered Brooklyn, N.Y. whco.	
NOTE: ON DIRECT SHIPMENTS TO OUR CUSTOMER PLEASE FORWARD US SHIPPING DATE AND ROUTING.		

EXHIBIT B (2 of 2 pages)

- 4.11 System shall be designed to withstand hydrostatic test loads without the use of additional supports.
- 4.12 Consideration should be given to the size and application of fittings such as elbows, tees, and laterals, also crifices. When high velocity water is introduced into pipe lines in a direction parallel to the main flow, a wye connection shall be used to reduce erosion. Special consideration should be given particularly to the extraction lines from the turbine.
- 4.13 The nuclear steam system should not in any way be connected to the building heating system.
- 4.14 Stainless steel piping should be sleeved through concrete and otherwise arranged to prevent contamination due to chlorides. Sleeves show plans for 2/5
- 4.15 Thermal sleeves shall be employed at intersections where temperature difference exists between two flows.
- 4.16 Connections for obtaining steam samples must be carefully located so as to obtain a true steam sample, free of carried over or precondensed water.

5.0 MATERIALS

5.1 Connections

Any vessel or equipment nozzles to which piping is to be welded should have a shop installed safe end of the same material as the piping. No dissimilar metal joint field welds should be permitted. All stainless steel to carbon steel joints should be shop welded. position marked in 1/2"

5.2 In general, in the transition from the primary coolant loop to one of the nuclear steam supply auxiliaries where the piping material changes from stainless steel to carbon steel, the transition joint should be made downstream from the first shut-off valve on the lines leading from the stainless system and upstream from the last shutoff valve on lines leading to the stainless system. However, in the cases of primary steam and primary feedwater lines the material change occurs at the vessel nozzle. It is recommended that for all piping connections to the reactor vessel for system that are not in normal continuous use, the piping up to and including the first stop valve be fabricated from stainless steel. All dissimilar metal joints (stainless to carbon steel) should be easily accessible for inspection. 5/5
App.
from
lines
to 1
step

5.3 Material Specification Recommended for the Following Systems

5.3.1 Pipes: ASTM A-376, A-312, and A-338 Class 1, Type 304 or 316 stainless steel
Fittings: 2" and under ASTM A-192, GR.F304
2 1/2" and up ASTM A-403, GR.XP-304 or 304 - 304

Has low stress values but use on high pressure systems

- 5.3.1.1 Emergency Condenser
- 5.3.1.2 Control Rod Drive Hydraulic (where specified)
- 5.3.1.3 Reactor Cleanup
- 5.3.1.4 Liquid Poison
- 5.3.1.5 Reactor Recirculating System
- 5.3.1.6 Condensate Demineralizer
- 5.3.1.7 Instrumentation and Control, all reactor main steam systems (where specified)
- 5.3.1.8 Core Spray
- 5.3.1.9 Shutdown Cooling

FUNCTIONAL SPECIFICATION AND DESIGN CRITERIA
FOR
JERSEY CENTRAL
OYSTER CREEK NUCLEAR POWER PLANT

Author: GB LLOYD

Date: July 13, 1964

Revisions:

3

GENERAL ELECTRIC COMPANY
ATOMIC POWER EQUIPMENT DEPARTMENT

EXHIBIT C (1 of 3 pages)

FUNCTIONAL SPECIFICATION AND DESIGN CRITERIA

FCR

PIPING AND VALVES

1.0 SCOPE

1.1 Purpose

This criteria establishes specific requirements for any piping system connected to the reactor pressure vessel and for all piping systems which will or may become contaminated by radioactive fluids.

1.2 Extent

Systems covered by this criteria are listed below:

System not specified considered an extension

- 1.2.1 Control Rod Drive Hydraulic System
- 1.2.2 Reactor Water Recirculating System
- 1.2.3 Reactor Cleanup System
- 1.2.4 Emergency Condenser System
- 1.2.5 Reactor Shutdown System
- 1.2.6 Core Spray System
- 1.2.7 Post Incident Cooling System
- 1.2.8 Liquid Poison System
- 1.2.9 Main Steam System —
- 1.2.10 Condensate System
- 1.2.11 Condensate Demineralizer System
- 1.2.12 Extraction and Heater Drain Systems
- 1.2.13 Feedwater System
- 1.2.14 Condensate Surge System
- 1.2.15 Refueling Tank Water Storage System
- 1.2.16 Fuel Pool Cooling and Filtering System
- 1.2.17 Reactor Building Closed Cooling System
- 1.2.18 Drywell and Suppression Pool Vent Systems
- 1.2.19 Condenser Off-Gas System
- 1.2.20 Instrumentation and Control
- 1.2.21 Turbine Building Closed Cooling Water System
- 1.2.22 Radioactive Waste Disposal System
- 1.2.23 Resin Transfer System
- 1.2.24 Steam to Air Ejectors
- 1.2.25 Turbine Gland Steam and Drains
- 1.2.26 By-Pass Steam System
- 1.2.27 Reheater Supply Systems

ASA B16.11 "Steel Socket Weld Fittings"
B36.10 "wrought steel in wrought iron pipe"
B36.19 "stainless steel pipe"

2.0 CODE REQUIREMENTS

2.1 ASA Code

With the exception of the piping specifically defined in Paragraph 2.2 below, all piping, valves and fittings shall be designed, fabricated, erected, supported and tested in accordance with Sections 1 and 6, ASA B31.1, B16.11, B36.10 and B36.19, Codes for Pressure Piping together with the latest supplements, addenda and applicable nuclear code cases.

EXHIBIT C (2 of 3 pages)

GENERAL ELECTRIC
COMPANY

175 CURTNER AVE., SAN JOSE, CALIF. 95125 . . . AREA CODE 408, TEL. 277-3000
TWX NO. 408-267-6484

NUCLEAR ENERGY
DIVISION

7

ATOMIC POWER EQUIPMENT DEPARTMENT

October 10, 1966

60 ft
Gerr.
Rene Py...

RAH-66-398
JCL-66-7

60 A.C
2299
10/13 O.K.
GAL
FMK
10/14 AGH

Jersey Central Project: Req. 303-91700
Subject: Emergency Condenser Piping

Mr. D. H. Kregg
Burns & Roe, Inc.
700 Kinderkamack Rd.
Oradell, New Jersey, 07960

Ref: Telecon J. Larrew and G. Lari, October 10, 1966
Meeting R.A. Huggins and G. Lari, October 7, 1966

Dear Dave:

A353 welded FOR OUR SIZES

Our criteria on piping for the Emergency Condenser system originally outlined A 312 (seamless or welded pipe) or, as an alternate, A 376 (seamless pipe). Your specification requires seamless pipe for this system.

I understand that procurement problems have arisen based on obtaining seamless pipe as outlined in your specification. As mentioned in our criteria, welded pipe is acceptable for this application. We understand that you will perform stress analysis based on the use of welded stainless steel pipe and specify the necessary piping schedule.

Sincerely yours,

R. A. Huggins
R. A. Huggins
Principal Project Engineer
Jersey Central Project

JCL/RAH/ac

* ADVISE BIDDERS TO S-60

ADVISED TUBES
11/11/66 GAL
11/11/66
GAL

EXHIBIT

CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION TELEGRAM

SYMBOLS
DL = Day Letter
NL = Night Letter
LT = International Letter Telegram

The time shown in the date line on domestic telegrams is LOCAL TIME at point of origin. Time of receipt is LOCAL TIME at point of destination

LE 017 1133P EST MAR 27 69 (19)3YA019 NSA404
NS 830544 JT COLLECT HOUSTON TEX 27 1004P CST
TUL100 D10

ATTN ART GREEN, VICE PRES 125 VARICK AVE BROOKLYN NY
RE YOUR LETTER RECEIVED TODAY. WILL CERTIFY PIPE MANUFACTURED
TO A-358 SPECIFICATION INSTEAD OF A-312. PAPERS WILL BE MAILED
SHORTLY

A. W. CALBRAITH FORMERLY OF ALLOY TUBE AND PIPE

A-358 & A-312.

BF12011112 63)

EXHIBIT E

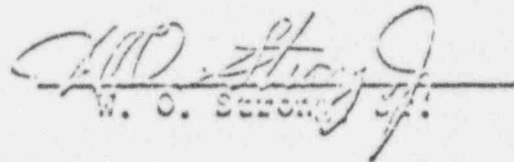
April 4, 1969

Re: Albert Pipe & Supply P. O. #2 36873 D

At the time of issuance and manufacture of the piping furnished under the referenced Purchase Order, I was employed as General Manager of Alloy Tube & Pipe Corporation.

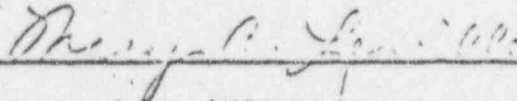
In this capacity, the Quality Control Department was directly responsible to me.

To the best of my knowledge and belief, all requirements of A-358 have been complied with for the piping furnished to Albert Pipe & Supply Co.


W. O. Strong

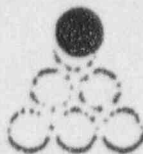
WOS:ml

Signed before me 4-4-69.



MARY W. LEVILLE
Notary Public, in and for Dallas County, Texas
My Commission Expires June 1, 1970

EXHIBIT F



alloy tube & PIPE CORPORATION

P. O. BOX 2415 • HOUSTON, TEXAS 77011
PHONE WA 6-2570 / AREA CODE 713

April 4, 1969

CERTIFICATION

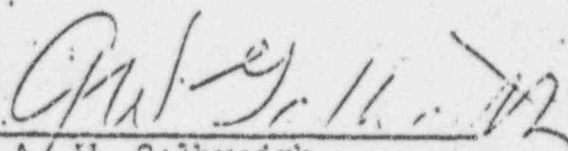
Re: P. O. #2 36873 D

Fr: Albert Pipe & Supply Co., New York to
Alloy Tube & Pipe Corporation.

Although the referenced Purchase Order called for A-312 welded pipe, the required wall thicknesses were such that A-358 was applicable, and was, in fact, provided.

To the best of my knowledge and belief, all requirements of A-358 have been complied with for the piping furnished to Albert Pipe & Supply Co.

The material certifications and piping were marked as A-312 solely for the purpose of conforming to the purchase order. Material certifications have been corrected and are attached.



A. W. Galbraich

AWC:m1

Signed before me 4-4-69



EXHIBIT G

TEST REPORT

ALLOY TUBE AND PIPE CORP.

PHONE 713-7468 WA 8-7468 WA 8-1784 • P. O. BOX 9429 • 1000 PHID • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO. 1513 DATE SHIPPED 3-10-67 DATE 4-3-69
 Albert Pipe & Supply YOUR ORDER NO.
 101 Varick Avenue P 36873 D
 Brooklyn, N. Y. 11237 REFERENCE
 Attn: A. B. Wesler CORRECTED COPY

ITEM	DESCRIPTION	SPECIFICATIONS
2.	16" x .843" Wall Welded A&P Pipe x R/L S.S.	Type 316 A-358
3.	14" OD x .750" Wall ditto	Type 316 A-358

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Case N-7 to ASA B31 Sect.

ITEM	CHEMICAL ANALYSIS										
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU	(X)
2.	32059	.047	1.60	.024	.024	.63	17.55	12.53	2.20		
The above heat number is correct. In the event heat 32069 is marked on the material, please revise if you feel it necessary.											
3.	11547	.052	1.74	.024	.018	.54	17.75	12.57	2.62		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNE
2.		34,500	80,000	62	70	149-156
3.		36,500	80,000	66	72.5	156-163

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

C. J. ...
 Alloy Tube & Pipe Corp

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69

Mary A. ...
 MARY A. ...
EXHIBIT H (1 of 6 pages)

TEST REPORT

ALLOY TUBE AND PIPE CORP.

PHONE 713-WA 8-7488 WA 8-1784 • P. O. BOX 8428 • 1600 FRIED • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO.	DATE SHIPPED 3-17-67	DATE 4-3-69 YOUR ORDER NO. P 36873 D REFERENCE
Albert Pipe & Supply Co. 101 Varick Avenue Brooklyn, N. Y. 11237 Attn: A. B. Wesler	CORRECTED COPY	

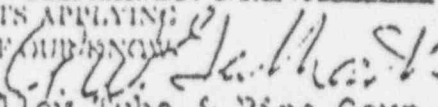
ITEM	DESCRIPTION	SPECIFICATIONS
4.	12" x .687" Wall Weld, Pipe A&P S.S. x 14' R/L	Type 316 A-358
5.	10" x .593" Ditto	Type 316 A-358

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Class N-7 to ASA W31 Sect. 1

ITEM	CHEMICAL ANALYSIS										
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU	CO.
4.	76687	.072	1.41	.026	.021	.72	17.38	12.65	2.15		
5.	K56682	.043	1.49	.020	.022	.41	17.57	12.75	2.27		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
4.		46,300/45,300	83,500/83,100	54/50		BN-148-153
5.		39,500	76,400	56		BN-135

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.


 Alloy Tube & Pipe Corp.

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69



EXHIBIT 1-(2 of 6 pages)

TEST REPORT

ALLOY TUBE AND PIPE CORP.

PHONE 713-WA 8-7488 WA 8-1724 • P. O. BOX 8428 • 1966 PHO • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO.	DATE SHIPPED	DATE 4-3-69
Albert Pipe & Supply 101 Varick Ave. Brooklyn, N. Y. 11237 Agent: A. B. Wesler	CORRECTED COPY	YOUR ORDER NO. P 30071 B REFERENCE

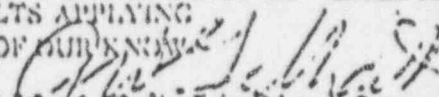
ITEM	DESCRIPTION	SPECIFICATIONS
4.	12" x .687" Wall Weld. Pipe S.S. X R/L A&P	All Material Type 316 A-358
5.	10" x .593" Ditto	
6.	8" x .500" Ditto	

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Case N-7 to ASA B31 Sect.

ITEM	CHEMICAL ANALYSIS										
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU	CO.
4.	76687	.072	1.41	.026	.021	.72	17.38	12.65	2.15		
5.	56682	.043	1.49	.020	.022	.41	17.57	12.75	2.27		
6.	56619	.080	1.52	.025	.023	.61	17.21	13.51	2.10		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
4.		46,300/45,300	83,500/83,100	54/50		BN 140/153
5.		39,500	76,400	56		BN 135
6.		43,800	81,100	55		BN 142

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.


 Alloy Tube & Pipe Corp.

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69


 Notary Public

EVU01117

ALLOY TUBE AND PIPE CORP.

PHONE 313-WA 6-7188 WA 6-1784 • P. O. BOX 9422 • 1600 FRIG • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO. B 1844 DATE SHIPPED 3-31-67 DATE 4-3-69
 Albert Pipe & Supply CORRECTED COPY YOUR ORDER NO.
 101 Varick Ave. P 36873 D
 Brooklyn, N. Y. 11237 REFERENCE
 Attn: A. B. Wesler

ITEM	DESCRIPTION	SPECIFICATIONS
4.	12" x .687" Wall x 14' R/L.	Type 316 A-358
5.	10" x .593" Wall	Type 316 A-358
6.	8" x .500" Wall	Type 316 A-358

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Case N-7 to ASA 841 Sect.

ITEM	CHEMICAL ANALYSIS										
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLOY	CU	CO.
4.	76687	.072	1.41	.026	.021	.72	17.38	12.65	2.15		
5.	56632	.043	1.49	.020	.022	.41	17.57	12.75	2.27		
6.	56619	.080	1.52	.025	.023	.61	17.21	13.51	2.10		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUC. IN	HARDNESS
4.		46,300	83,500	54		BN 148
		45,300	83,100	50		BN 153
5.		39,500	76,400	56		BN 135
6.		40,800	81,000	58		BN 137

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Alloy Tube & Pipe Corp.
 Alloy Tube & Pipe Corp

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69

Dray C. Lewis

EXHIBIT H (4 of 6 pages)

ALLOY TUBE AND PIPE CORP.

ALLOY TUBE AND PIPE CORP.

PHONE 712-WA 6-7488 WA 6-1754 • P. O. BOX 8428 • 1908 FRIQ • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO. B 1856

DATE SHIPPED 4-17-67

DATE 4-3-69

YOUR ORDER NO.

Albert Pipe & Supply
101 Varick Ave.
Brooklyn, N.Y. 11237
Attn: A. B. Wesler

CORRECTED COPY

P 36873 D

REFERENCE

ITEM DESCRIPTION SPECIFICATIONS

5. 10" x .593" Welded A&P Pipe x R/L S.S. Type 316 A-358

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Case N-7 to ASA B31 Sect.

ITEM CHEMICAL ANALYSIS

ITEM	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
5.	56619	.080	1.52	.025	.023	.61	17.21	13.51	2.10		

ITEM MECHANICAL TESTS YIELD PSI TENSILE ELONGATION REDUCTION HARDNESS

5. 40,800 81,000 58 BN 137

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Albert Pipe & Supply
Albert Pipe & Supply Corp

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69

Mary A. Lyville
MARY A. LYVILLE

EXHIBIT H (5 of 10) Public, in and for Harris County, Texas

ALLOY TUBE AND PIPE CORP.

PHONE 712-WA 6-7450 WA 6-1784 • P. O. BOX 8429 • 1000 PHID • HOUSTON, TEXAS 77011

ORDER SHIPMENT NO. 1845
 Albert Pipe & Supply Co.
 101 Varick Ave.
 Brooklyn, New York 11237
 Attn: A. B. Wesler

DATE SHIPPED 4-17-67

DATE 4-3-69
 YOUR ORDER NO.
 P 36873 D Add 1
 REFERENCE

CORRECTED COPY

ITEM	DESCRIPTION	SPECIFICATIONS
1.	16" OD x S/80 (.843" Wall) S. S. Welded Pipe x 2' Lg.	Type 316 A-358

Ref. Wire 5-2-67 on all pipe matl. meets X-ray Code Case N-7 to ASA B31 Sect

ITEM	CHEMICAL ANALYSIS							CO.	
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY
1.	30975	.043	1.72	.023	.011	.60	17.75	12.55	2.65

ITEM	MECHANICAL TESTS		YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDN
			37,000	82,000	56	72	167-1

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Alloy Tube & Pipe Co.
 Alloy Tube & Pipe Co.

SWORN AND SUBSCRIBED TO BEFORE ME 4-3-69

Mary A. Loville

EXHIBIT H (6 of 6 pages)

Notary Public in and for Harris County, Texas
 My Commission Expires June 6, 1969

TEST REPORT

ALLOY TUBE & PIPE CORPORATION

Manufacturers of Stainless Steel Pipe and Tubing

PHONE SALES DEPT 6-29711

P. O. BOX 9419

1015 FRIED

HOUSTON, TEXAS 77011

ORDER NUMBER 2577

DATE SHIPPED 12-2-66

DATE 12-2-66

ALLOY TUBE & PIPE CORPORATION
101 VANDERBILT AVE.
ROCHESTER, NEW YORK 14627

CORRODED COPY

YOUR ORDER NO.
25673 B. 122 2.

REFERENCE

ITEM	DESCRIPTION	SPECIFICATIONS
1-2	1. 15" S/S (.843") S.S. 304 STB. HHS 2. 14" S/S (.750") STB	TYPE 316 A-203

REC. WTR 9-2-67 ON ALL PIPE MFG. NEEDS X-RAY CODE CASE H-7 TO ASA B31 SECT. 2

ITEM	CHEMICAL ANALYSIS	HEAT NO.	CARBON	MANC.	PHOS.	SUL.	SIL.	CHROME	NICKEL	MOLY	CU.	CO.
1.	24003	.050	1.43	.025	.010	.42	17.22	13.40	2.42			
2.	22135	.040	1.30	.023	.020	.42	17.65	13.70	2.29			

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
1.		47,300	85,300	53.0	65.3	SH 163
2.		40,530	80,920	56.0		SH 149

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SWORN AND SUBSCRIBED TO BEFORE ME

DECEMBER 12, 1966

EXHIBIT I (1 of 8 pages)

John S. Lawrence
John S. Lawrence

TEST REPORT

ALLOY TUBE & PIPE CORPORATION

Manufacturers of Stainless Steel Pipe and Tubing

PHONE WALNUT 6-2773

P. O. BOX 9429

1015 FRIO

HOUSTON, TEXAS 77011

ORDER NUMBER NO. **7 3695**

DATE SHIPPED **2-13-67**

DATE **2-21-67**

YOUR ORDER NO.

2 36973 D ADD 1

REFERENCE

**ALLOY TUBE & PIPE CO.
101 VICTOR AVE.
HOUSTON, TEXAS 77002 22237**

COPIED COPY

ITEM	DESCRIPTION	SPECIFICATIONS
------	-------------	----------------

3.	16" x 20' 6/00 .903 x .993 EOC. RESISTED BEVELLED ENDS	TYPE 316 A-103
----	--	----------------

RE: WITH 9-2-67 ON ALL PIPE MADE. NEEDS X-RAY CODE CASE H-7 TO ASA B31 SPEC. 1

ITEM	CHEMICAL ANALYSIS
------	-------------------

HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
----------	--------	-------	-------	-----	-----	--------	--------	------	-----	-----

3.	30266	.032	2.25	.018	.005	.42	27.10	23.59	2.36	
----	-------	------	------	------	------	-----	-------	-------	------	--

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
------	------------------	-----------	---------	------------	-----------	----------

42,110

81,700

47

BHN 154

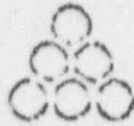
WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SWORN AND SUBSCRIBED TO BEFORE ME

EXHIBIT I (2 of 8 pages)

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 9429 • HOUSTON, TEXAS 77011
PHONE WA 6-2370 / AREA CODE 713

ORDER NO. 1513 DATE SHIPPED 3-20-67 DATE 3-26-67
 YOUR ORDER NO. P 30073 D
 REFERENCE

ALLOY TUBE & PIPE CO.
 120 WILSON AVE.
 HOUSTON, TEXAS 77037

COATED PIPE CORP

ITEM	DESCRIPTION	SPECIFICATIONS
2.	1 1/2" O.D. X .043" WALL HEAVY WELD PIPE X R/L S.S.	TYPE 316 A-312
3.	1 1/2" O.D. X .050" WALL WELD	TYPE 316 A-312

REQ. ITEM 3-20-67 ON ALL PIPE WELD. 100% X-RAY GOOD CASE N-7 TO AREA D31 SECT. 2

ITEM	CHEMICAL ANALYSIS	C	M	P	S	SI	CR	NI	MO	CU	CO
	HEAT NO.	CARBON	MANG.	PHOS.	SUL.	SIL.	CHROME	NICKEL	MOLY	CU	CO.
2.	32099	.047	1.60	.024	.024	.63	17.55	12.53	2.20		
The above heat number is correct. In the event heat 32069 is marked on the material, please notify, if you feel it necessary.											
3.	12077	.052	1.74	.024	.013	.54	17.75	12.57	2.62		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
2.		34,500	80,000	62	70	148-155
3.		36,500	80,000	66	72.5	153-163

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SWORN AND SUBSCRIBED TO BEFORE ME

MARCH 26, 1967

VALIDITY T (2.00.1967)

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 9425 • HOUSTON, TEXAS 77011
PHONE WA 6-2970 / AREA CODE 713

ORDER NO. _____ DATE SHIPPED 3-27-67 DATE 3-27-67
 YOUR ORDER NO. _____
 2-30073 D
 REFERENCE _____
 RECEIVED COPY _____

FROM: _____ DESCRIPTION: _____ SPECIFICATIONS: _____

1. 12" O.D. 10' L. WALL WELD. PIPE 1/2" O.S. II 2 1/2
 5. 12" O.D. 10' L. PIPE

SPEC 316 A-312
 SPEC 316 A-312

REF. SPEC 9-2-67 ON ALL PIPE INCL. ITEMS N-TNY COVER CASE H-7 TO ASA B31 SPEC. 1

FROM: _____ CHEMICAL ANALYSIS

ITEM	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
1.	70007	.072	1.41	.006	.001	.72	17.33	12.65	2.15		
5.	25002	.043	1.19	.000	.002	.41	17.57	12.75	2.27		

FROM: _____ MECHANICAL TESTS YIELD FSI TENSILE ELONGATION REDUCTION HARDNESS

1.	16,300/45,300	83,500/83,100	51/50	EM-218-253
5.	39,500	73,400	56	EM 235

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SUBSCRIBED TO BEFORE ME _____

Eric C. ...
EXHIBIT I (4 of 8 pages)

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 6425 • HOUSTON 1, TEXAS 77011
PHONE WA 6-2270 / AREA CODE 713

DATE SHIPPED _____ DATE _____
 YOUR ORDER NO. _____
 REFERENCE _____
 ORDERED BY _____
 ORDER NO. _____
 ORDER DATE _____

ITEM	DESCRIPTION	SPECIFICATIONS
1.	10" N. 1.007" W.H.D. PIPE S.C. 3/4" I.D.	SEE SPECIFICATIONS
2.	10" N. 1.007" W.H.D. PIPE	SEE SPECIFICATIONS
3.	6" N. 1.007" W.H.D. PIPE	SEE SPECIFICATIONS

ITEM	CHEMICAL ANALYSIS	IRON	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU	CO.
1.	50204		.072	1.41	.025	.021	.72	17.35	12.65	2.25		
2.	50202		.073	1.49	.020	.022	.41	17.57	12.75	2.27		
3.	50210		.060	1.52	.025	.023	.61	17.21	13.51	2.20		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
1.		46,300/5,300	83,500/93,100	54/50		BT 240/253
2.		39,500	76,400	56		BT 239
3.		43,600	81,100	55		BT 242

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING TO
 ON THIS ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOW-
 LEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SIGNED AND SUBSCRIBED TO BEFORE ME _____ MARCH 23, 1957

EXHIBIT I (5 of 8 pages)

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 9479 • HOUSTON, TEXAS 77211
PHONE WA 6-2970 / AREA CODE 713

ORDER NO. 11237 ✓ DATE SHIPPED 3-22-57
 DATE 1-2-57
 YOUR ORDER NO. P-33912-3
 QUANTITY 1000
 REFERENCE

ITEM	DESCRIPTION	SPECIFICATIONS
1-	20" X 105" WALL X 11.5" R/L	TYPE 316, 1-312
1-	20" X 99.5" WALL	TYPE 316, 1-312
1-	20" X 99.5" WALL	TYPE 316, 1-312

RESULTS OF TESTS ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ITEM	CHEMICAL ANALYSIS	YIELD	TENSILE	ELONGATION	REDUCTION	HARDNESS					
	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
1-	7817	.072	1.41	.025	.021	.72	17.80	12.65	2.25		
1-	5130	.043	1.49	.020	.022	.41	17.57	12.75	2.27		
1-	5119	.060	1.52	.025	.023	.61	17.21	13.51	2.10		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
1-		16,300	83,500	51		BK 143
1-		15,300	83,100	50		BK 153
1-		39,500	73,100	55		BK 135
1-		10,000	81,000	58		BK 137

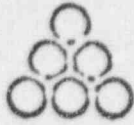
WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION
 SWORN AND SUBSCRIBED TO BEFORE ME APRIL 3, 1957

EXHIBIT I (6 of 8 pages)

D. M. [Signature]

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 9479 • HOUSTON, TEXAS 77011
PHONE WA 8-2970 / AREA CODE 713

OUR REF. NO. B 1856 ✓ DATE SHIPPED 4-17-67 DATE 4-19-67
 CLIENT'S NAME AND SUPPLIER 11237 YOUR ORDER NO. P 36873 D
 101 VARICK AVE. BROOKLYN, NEW YORK 11237 COLLECTED COST REFERENCE

ITEM	DESCRIPTION	SPECIFICATIONS
5.	10" X .593" WELDED ALP PIPE X R/L S.S.	TYPE 316 A-312

WE CERTIFY THAT ALL TESTS WERE MADE BY THE COMPANY'S LABORATORY.

ITEM	CHEMICAL ANALYSIS	HEAT NO.	CARBON	MANG.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
5.	56619		.000	1.52	.025	.023	.61	17.21	13.61	2.10		

ITEM	MECHANICAL TESTS	YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
		40,800	81,000	58		EH 137

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

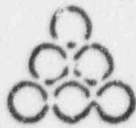
ALLOY TUBE & PIPE CORPORATION

SWORN AND SUBSCRIBED TO BEFORE ME APRIL 19, 1967

EXHIBIT I (7 of 8 pages)

[Handwritten signature]

TEST REPORT



alloy TUBE & PIPE CORPORATION

P. O. BOX 9428 • HOUSTON, TEXAS 77011
PHONE WA 6-2970 / AREA CODE 713

OUR SHIPMENT NO. 1045 ✓ DATE SHIPPED 4-17-67 DATE 4-19-67
 ALBERT PIPE & SUPPLY CO. YOUR ORDER NO. P 05873D 122 1
 101 WILKINSON AVE. COLLETT'S CHRG REFERENCE
 BROOKLYN, NEW YORK 11237

ITEM	DESCRIPTION	SPECIFICATIONS
1	16" OD x 5/8" (.243" WALL) S.S. WELDED PIPE X 2' LG.	TYPE 316 A-312

TEST BY W. G. G. (C) (R) ALL PIPE MFG. CO. X-RAY CRACK CAP. P-7 TO ASA B31 SECT. 1

ITEM	CHEMICAL ANALYSIS										
	HEAT NO.	CARBON	MANC.	PHOS.	SUL	SIL	CHROME	NICKEL	MOLY	CU.	CO.
1	30275	.043	1.72	.023	.011	.60	17.75	12.55	2.65		

ITEM	MECHANICAL TESTS		YIELD PSI	TENSILE	ELONGATION	REDUCTION	HARDNESS
			37,000	82,000	56	72	167-170

WE CERTIFY THAT THE CHEMICAL ANALYSIS AND PHYSICAL TEST RESULTS APPLYING ON THE ABOVE ORDER NUMBER ARE CORRECT AND TRUE TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

ALLOY TUBE & PIPE CORPORATION

SWORN AND SUBSCRIBED TO BEFORE ME APRIL 19, 1967

EXHIBIT I (8 of 8 pages)

ALBERT

PIPE SUPPLY CO., INC.
101 VARICK AVENUE
BROOKLYN, N.Y. 11237
212 HY 2
CABLE: PIPESUP

PIPE
VALVES FITTINGS

PURCHASE ORDER

TO Svecco Tube Corp.
1 Clifton Blvd.
PO Box 328
Clifton, N.J.
Attn: Mr. Obergfall

S Tubeco, Inc.
H 123 Varick Ave.
I Brooklyn, N.Y. 11237
P

DATE 10/25/66 F.O.B. POINT delivered. TERMS 2/10/30 V36873 D

SHIPPING INSTRUCTIONS best way DATE WANTED RUSH 14 wks. or snr. THE ABOVE ORDER NO MUST BEAR ON ALL INVOICES & SHIPPING PAPERS & REFERRED TO CORRESPONDENCE

PACK FOR EXPORT SHIPMENT SHIP IN OUR NAME PARTIAL SHIPMENT ALLOWED SHIP COMPLETE ES/BC

QUANTITY	DESCRIPTION	PRICE
CONFIGURATION		
	REF: F-23390 - 10/3/66	
	TAG: ALL ITEMS JOB 609600 REQ. T-1998	
	(3) 4" (2) 4" (2) 4"	
13	12" Sch. 80 (.687) wall L.R. 90 deg. weld Ells	
	ASTM A403 TP 316 (includes 100% radiography)	
	ends bev. for welding std. ASA bevels	
12	10" Sch. 80 (.593 wall) ditto	
1	10" Sch. 80 (.593 wall) L.R. 78 deg. - 55" Ell ditto	
1	10" Sch. 80 (.593 wall) L.R. 46 deg. - 5" Ell ditto	
1	10" Sch. 80 (.593 wall) L.R. 30 deg. Ell ditto	
1	10" Sch. 80 (.593 wall) S.R. 90 deg. Ell ditto	
1	12" Sch. 80 (.687 wall) LR 60 deg. Ell ditto	
1	12" Sch. 80 (.687 wall) L.R. 45 deg. Ells ditto	
1	10" Sch. 80 (.593 wall) ditto	
1	10" Sch. 80 (.593 wall) x 8" Sch. 80 (.500 wall) conc. weld reducers ditto	

Handwritten notes on the left side of the table, including quantities and dates like 3/17, 3/27, and 3/17.

Handwritten note: "Cancel 44021"

Handwritten note: "L-2/3"

NOTE: ON DIRECT SHIPMENTS TO OUR CUSTOMER PLEASE FORWARD US SHIPPING DATE AND ROUTING.

EXHIBIT J

SWEPCO TUBE CORPORATION

Swepeco

ONE CLIFTON BOULEVARD • CLIFTON, NEW JERSEY

PRESCOTT 8-3000

TWX NO. PAS-313

March 27, 1969

Tubeco, Inc.
123 Varick Avenue
Brooklyn, New York

Reference: Job: 609-600, Requisition T-1998, Swepeco J-9391-P

Attention: Mr. A. Green

Gentlemen:

This letter is to certify that the fittings manufactured on the above order were welded using welding procedures qualified under the provisions of Section IX of the ASME Boiler and Pressure Vessel Code, made by welders qualified under the same section. In addition the welds were x-rayed 100% in accordance with Para UW-51, Section VIII of the ASME Boiler and Pressure Vessel Code.

Very truly yours,

SWEPCO TUBE CORPORATION

Alfred Friedlander

Alfred Friedlander
Manager, Order Department

AP:dc

A NOTARY PUBLIC OF NEW JERSEY
My Commission Expires March 24, 1974

Sworn to and subscribed before me
this 27 day of March 1969

John J. Smith

EXHIBIT K

MANUFACTURERS OF *Swepeco* CORROSION RESISTANT PIPE AND TUBING

PURCHASE ORDER

BURNS AND ROE

ORADELL, NEW JERSEY 07849

BR2299-164

(PURCHASE ORDER #)

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDING SHIPPING MEMORANDA, INVOICE (IN QUADRUPLES) PACKAGE AND CONTAINERS.

5/25/67

2299-45

(ACQUISITION #) (WORK ORDER #)

TO

PAGE 2 OF 6 PAGES

BERGEN INDUSTRIAL COMPANY

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACC NUM
315 ✓ 315 spec 11/10/67	2	1/2" Gate Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-19-31 V-19-32 System Desig: S-8552-12	ea	40.95	81 90	
319	1	2" Check Valve, 175# Design Pressure, socket weld ends as per Group IXa Tag No: V-12-13 System Desig: S-3182-12	ea	224.25	224 25	
320	1	1-1/2" Diaphragm Valve 175# Design Pressure, socket weld ends as per Group IXa Tag No: V-12-56	ea	76.38	76 38	
322 ✓	5	2" Diaphragm Valve, 175# Design Pressure, socket weld ends as per Group IXa Tag No: V-12-67, V-12-53, V-12-54 V-12-69, V-12-70	ea	99.72	498 60	
327 ✓	2	4" Gate Valve, 125# ASA std, flat face flanged connection as per Group V Tag No. V-6-24 V-6-25	ea	67.10	134 20	
329 ✓	3	1" Globe Valve, 150# ASA Standard, socket weld ends as per Group IV Tag No: V-6-35, V-6-36, V-6-37 System Desig: 3662-2	ea	26.72	80 16	
331 ✓	1	1" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag No. V-6-64 System Desig: 3662-2	ea	26.72	26 72	
333 ✓	4	1/2" Globe Valve, 125# ASA std, screwed ends as per Group V Tag No: V-6-74, V-6-75, V-6-76, V-6-77	ea	7.48	29 92	
332 ✓	1	1/2" Globe Valve, 125# ASA std, screwed ends as per Group V Tag No: V-6-173	ea	7.48	7 48	
337 ✓	1	1-1/2" Globe Valve, 125# ASA std, screwed ends as per Group V Tag No: V-6-166	ea	22.77	22 77	

15-2
11.

EXHIBIT CONTINUED NEXT PAGE
L-1 (2 of 9 pages)

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07049

BR2299-164

(PURCHASE ORDER #)
IMPORTANT: THIS NUMBER MUST
APPEAR ON ALL CORRESPONDENCE,
SHIPPING MEMORANDA, INVOICES,
(IN QUADRUPPLICATE) PACKAGES
AND CONTAINERS.



TO
BERGEN INDUSTRIAL COMPANY

PAGE 3 OF 6 PAGES

5/25/67

(DATE)

2299-45

(REQUISITION #) (WORK ORDER #)

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOU NUMB
338 ✓	1	1-1/2" Check Valve, 125# ASA std screwed ends as per Group V Tag No: V-6-167	ea	12.32	12 32	
340 ✓	1	2" Gate Valve, 125# ASA std, screwed ends as per Group V Tag No: V-6-174	ea	18.15	18 15	
341 ✓	1	3/4" Globe Valve, 125# ASA std, screwed ends as per Group V	ea	10.23	10 23	
342	1	1-1/2" Gate Valve, 125# ASA std, screwed ends as per Group V	ea	12.54	12 54	
343 ✓	4	1" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag Nos: V-6-176, V-6-177, V-6-178 V-6-179 System Desig: 3662-2	ea	26.72	106 88	
345 ✓	1	1" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-6-181 System Desig: 3662-2	ea	26.72	26 72	
346	1	3/4" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-6-182 System Desig: 3662-2	ea	22.10	22 10	
352 ✓	2	3/4" Gate Valve, 900# ASA std, socket weld ends as per Group I Tag No: V-31-3 V-31-4 System Desig: 31552-7	ea	71.30	142 60	
354 ✓	2	2" Check Valve 150# ASA std, socket weld ends as per Group IV Tag No: V-7-7 V-7-36	ea	67.93	135 86	
355 ✓	2	2" Gate Valve, 150# ASA std, socket weld ends as per Group IV Tag NO: V-7-8 V-7-37 System Desig: 596-2	ea	35.42	70 84	

13-1

CONTINUED NEXT PAGE
EXHIBIT L-1 (3 of 9 pages)

PURCHASE ORDER

BURNS AND ROE
ORADELI, NEW JERSEY 07040

BR2299-164

(PURCHASE ORDER #)
IMPORTANT: THIS NUMBER MUST
APPEAR ON ALL CORRESPONDENCE
SHIPPING MEMORANDA, INVOICES
(IN QUADRUPLET!) PACKAGES
AND CONTAINERS.

TO

BERGEN INDUSTRIAL COMPANY

PAGE 4 OF 6 PAGES

5/25/67

(DATE)
2299-45

(REQUISITION #) (WORK ORDER #)

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT		ACCOI NUMB
356 ✓	2	1-1/2" Gate Valve, 300# ASA std, socket weld ends as per Group III Tag No: V-7-29 V-7-35	ea	29.25	58	50	
358	1	System Desig: 596-2 4" Spring Loaded Check Valve, 150# ASA std Butt weld ends as per Group VIb Tag No: V-9-3	ea	91.56	91	56	
361 ✓	1	1" Globe Valve, 150 ASA std, socket weld ends as per Group IV Tag NO: V-9-11 System Desig: 3662-2	ea	26.72	26	72	
362	1	3" Spring Loaded Check Valve, 150# ASA std, Butt Weld ends as per Group VIb Tag No: V-9-19	ea	79.38	79	38	
363 -	1	3" Gate Valve, 150# ASA std, Butt weld ends as per Group IV Tag No: V-9-20 System Desig: 150-3 WE	ea	132.75	132	75	
364 ✓	1	2-1/2" Check Valve, 150# ASA std, Butt weld ends as per Group IV Tag No: V-10-17 System Design: 1803-WE	ea	107.25	107	25	
365	1	2-1/2" Gate Valve, 150# ASA std, Butt weld ends as per Group IV Tag No: V-10-34 System Desig: 150-3-WE	ea	122.25	122	25	
366 - ✓	4	1" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-10-36, V-10-37 V-10-38, V-10-39 System Desig: 3662-2	ea	26.72	106	88	
367 - ✓	3	1" Gate Valve, 150# ASA std, socket weld ends as per Group IV Tag Nos: V-10-40, V-10-41 V-10-47	ea	17.55	52	65	
368 - ✓	2	System Desig: 596-2 2" Gate Valve 150# ASA std, socket weld ends as per Group IV Tag Nos: V-10-42, V-10-43 System Desig: 596-2	ea	35.42	70	84	

CONTINUED NEXT PAGE

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR2299-164

(PURCHASE ORDER #)
IMPORTANT: THIS NUMBER MUST
APPEAR ON ALL CORRESPONDENCE,
SHIPPING MEMORANDA, INVOICES,
(IN QUADRUPLED) PACKAGES
AND CONTAINERS.

5/25/67

(DATE)
2299-45

(REQUISITION #) (WORK ORDER #)

TO

BERGEN INDUSTRIAL COMPANY

PAGE 5 OF 6 PAGES

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
69*	1	1" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-10-45 System Desig: 3662-2	ea	26.72	26 72	
370*	1	1-1/2" Gate Valve, 150# ASA std, socket weld ends as per Group IV Tag No: V-10-46 System Desig: 596-2	ea	29.25	29 25	
371	1	1" Gate Valve, 125# ASA std, screwed ends as per Group V Tag No: V-10-48	ea	7.15	7 15	
375-	6	1/2" Globe Valve, 150# ASA std, socket weld ends as per Group IV Tag Nos: V-10-61, V-10-62, V-10-67 V-10-68, V-10-69, V-10-70 System Desig: 3662-2	ea	18.53	111 18	
TOTAL ORDER PRICE.					\$3,664	23
FOB:	Warehouse, East Patterson, New Jersey					
SHIPPING CHARGES:	Prepay truck charges to job site and add to your invoice as a separate item or invoice separately. Kindly attach copy of Freight Bill to your invoice.					
DELIVERY:	Item 320, Item 322. <u>May 26, 1967</u> Balance. At job site, items shipped per your Mr. Joe Cal <u>May 24, 1967</u>					
DRAWINGS:	Kindly furnish within two(2) weeks five (5) copies of drawings for our approval. Drawing must show item number and tag number of each valve and must be for the valve size and valve rating of the item only, reference to other sizes and rating must be blocked out. After our approval, eighteen(18) copies shall be furnished for our distribution. Drawings should be addressed to the attention of our MR. J. W. RIDDINGTON.					
INSTRUCTION MANUALS:	Kindly furnish thirty-five (35) copies of Operations and Maintenance Instructions for each valve furnished.					

9

CONTINUED NEXT PAGE
EXHIBIT L-1 (5 of 9 pages)

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR2299-164

(PURCHASE ORDER #)
IMPORTANT: THIS NUMBER MUST
APPEAR ON ALL CORRESPONDENCE,
SHIPPING MEMORANDA, INVOICES,
IN QUADRUPPLICATE PACKAGES
AND CONTAINERS.

5/25/67
(DATE)

2299-45
(REQUISITION #) (WORK ORDER #)

TO
BERGEN INDUSTRIAL COMPANY

PAGE 6 OF 6 PAGES

ITEM NO CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOU NUMB
SPARE PARTS:		Kindly furnish your quotation covering one (1) year of operational spare parts for the valves furnished on this order.				

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF THIS ORDER.

IMPORTANT

ACKNOWLEDGE RECEIPT OF ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED.

BURNS AND ROE

BY J. P. Radtke
(PURCHASING AGENT)

CHANGE ORDER

(THIS IS NOT A PURCHASE ORDER BUT IS YOUR AUTHORITY TO MODIFY, CHANGE, CANCEL, OR CORRECT THE ORIGINAL PURCHASE ORDER)

BURNS AND ROE
 700 Kinderkamack Road
 Oradell, New Jersey

1	
CHANGE ORDER #	
IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, IN QUADRUPLET PACKAGES AND CONTAINERS	
October 9, 1967 (DATE)	
2299-45 (REQUISITION #) (WORK ORDER #)	
(SHIP VIA)	
(P.O. #)	
(SHIPPING DATE)	
(YOUR QUOTATION #)	
(DATE)	(TERMS)

NOTICE
 THIS CHANGE ORDER
 AUTHORIZES CHANGES
 ON PURCHASE ORDER #
 BR-2299-164

TO BERGEN INDUSTRIAL COMPANY
 14 Stefanic Avenue
 East Patterson, New Jersey
 Att: Mrs. M. Hilla
 Tel: 201-796-2600

SHIP TO Burns and Roe, Inc., c/o Jersey Central Power & Light Co.
 Forked River, Oyster Creek, New Jersey Att: Mr. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO As Above

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
		This change order is issued to cover the following:				
		Delete the following items from original purchase order:				
319		2" Check valve	ea.	224.25	224 25	
320		1-1/2" Diaphragm Valve	ea.	76.38	76 38	
331		1" Globe valve	ea.	26.72	26 72	
333		1/2" Globe valve	ea.	22.77	22 77	
341		3/4" Globe valve	ea.	10.23	10 23	
		Total deduction this change order			360 35	
		Also change description and unit price of Item 315 on original order as follows:				
		Description--1/2" Gate Valves SW Group IV				
		Unit price from \$40.95 to \$53.25 each				
		an addition of \$12.30 each or \$24.60				
		PREVIOUS TOTAL			3,664 23	
		Deduction this change order			360 35	
		Addition this change order			24 60	
		Revised total			3,328 48	

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF ASSOCIATED PURCHASE ORDER.

IMPORTANT

ACKNOWLEDGE RECEIPT OF CHANGE ORDER.
 NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED.

BURNS AND ROE

BY H. F. Shrewsbury, Jr.
 (7-69-22-22) PURCHASING AGENT

CHANGE ORDER

(THIS IS NOT A PURCHASE ORDER BUT IS YOUR AUTHORITY TO MODIFY, CHANGE, CANCEL, OR CORRECT THE ORIGINAL PURCHASE ORDER.)

BURNS AND ROE
700 Kinderkamack Road
Oradell, New Jersey

Walden/pj

2

(CHANGE ORDER #)

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, (IN QUADRUPLET) PACKAGES AND CONTAINERS.

October 18, 1967
(DATE)

2299-45

(REQUISITION #) (WORK ORDER #)

(SHIP VIA)

(P.O. #)

(SHIPPING DATE)

(YOUR QUOTATION #)

(DATE)

(TERM)

NOTICE
THIS CHANGE ORDER
AUTHORIZES CHANGES
ON PURCHASE ORDER #
BR-2299-164

Walden/pj
10-23-67

BURGEN INDUSTRIAL COMPANY
14 Stefanie Avenue
Paterson, New Jersey

Att: Mrs. M. Hilla
Tel: 201-796-2600

SHIP TO: Burns and Roe, Inc., c/o Jersey Central Power & Light Co.

Forked River, Oyster Creek, New Jersey Att: Mr. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO As Above

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
		This change order is issued to cover the following:				
		Delete change order one in its entirety. The following changes will also apply.				
319		Delete from original order			224 25	
320		Delete from original order			76 38	
315		Delete from original order			+ 81 90	
315	2	1/2" Globe Valve SW Group IV	ea.	53.25	106 50	
		Total addition this change order			106 50	
		Previous Purchase Order Total			3,664 23	
		Total deduction this change order			382 53	
		Revised Total			3,388 20	
		All other terms and conditions remain the same.				

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF ASSOCIATED PURCHASE ORDER.

IMPORTANT

ACKNOWLEDGE RECEIPT OF CHANGE ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED

BURNS AND ROE

EXHIBIT

H. F. Stevenson
PURCHASING AGENT

1-7 (8-5000)

CHANGE ORDER

THIS IS NOT A PURCHASE ORDER BUT IS YOUR AUTHORITY TO MODIFY, CHANGE, CANCEL, OR CORRECT THE ORIGINAL PURCHASE ORDER.

BURNS AND ROE
700 KINDERKAMACK ROAD
ORADELL, NEW JERSEY 07649

3	
CHANGE ORDER #	
IMPORTANT! THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, IN QUADRUPLET PACKAGES AND CONTAINERS	
Nov. 8, 1967	
DATE	
2299-45	
REQUISITION #	WORK ORDER #
SHIP VIA	
PORT	
SHIPPING DATE	
YOUR QUOTATION #	
DATE	TERMS

Bergen Industrial Co.
14 Stefanic Avenue
Paterson, N. J.

NOTICE
THIS CHANGE ORDER
AUTHORIZES CHANGES
ON PURCHASE ORDER #
BR-2299-164

Att: Mrs. M. Hilla

SHIP TO: Burns and Roe, Inc. c/o Jersey Central Power & Light Co.
Forked River, Oyster Creek, New Jersey Att: Mr. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO: As Above

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER	
		This Change Order issued to cover the following changes:					
358	1	Check Valve Delete	ea	\$91.56	\$91.56		
362	1	Check Valve Delete	ea	79.38	79.38		
		TOTAL Deletion this Change				\$170.94	
315		Add this item again as it was previously deleted on C. O. #2. Original P. O. item 315 remains as is.				81.90	
		TOTAL Deduction this Change				89.04	
		PREVIOUS TOTAL				\$3,388.20	
		REVISED TOTAL				\$3,299.16	
All other terms and conditions remain the same.							

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF ASSOCIATED PURCHASE ORDER.

IMPORTANT
ACKNOWLEDGE RECEIPT OF CHANGE ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED

BURNS AND ROE

BY *H. F. Shroeder*
PURCHASING AGENT

EXHIBIT L-1 (9 of 9 pages)

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR=2299-177

(PURCHASE ORDER #)
IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, AND CONTAINERS

6/8/67

(QUOTE)
2299-45

(REQUISITION #) (WORK ORDER #)
Truck

(SHIP VIA)
E. Paterson, N.J.

Shipping Complete

June 2, 1967
(SHIPPING DATE)

2% 10 days Net 30
(TERMS)

PAGE 1 OF 3 PAGES

TO BERGEN INDUSTRIAL COMPANY
14 Stefanie Ave.
East Paterson, New Jersey

Attention: Mr. M. Hilla
Telephone: 201-796-2600

SHIP TO BURNS AND ROE, INC., C/O Jersey Central Power & Light Co., Forked River, Oyster Creek, New Jersey Attention: Mr. K. E. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO AS ABOVE
200 UNDERKAMACH ROAD, ORADELL, NEW JERSEY 07649

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
		CONFIRMING VERBAL ORDER 5/29/67 DO NOT DUPLICATE				
		Miscellaneous Valves per Specification No. S-2299-61, a copy of which is in your possession				
391	13	2" Gate Valves, socket weld ends, Group IV	ea	\$109.00	\$1417.00	
		<u>TAG NO.</u> <u>SYSTEM DESIG</u>				
		V-22-147, V-22-149 NV-27				
		V-22-153 NV-5				
		V-22-167, V-22-169 NV-8				
		V-22-285, V-22-286				
		V-22-172, V-22-174, SD-1				
		V-22-176, V-22-178				
		V-22-180, V-22-182				
392	1	1-1/2" Gate Valve, socket weld ends, Group XId	ea	220.00	220.00	
		<u>TAG NO.</u> <u>SYSTEM DESIG</u>				
		V-22-218 NV-2				
393	4	3/4" Gate Valves, socket weld ends, Group No. III	ea	44.00	176.00	
		<u>TAG NO.</u> <u>SYSTEM DESIG</u>				
		V-20-56 V-20-57, NZ-2				
		V-20-58, V-20-59				
394	6	2" Globe Valves, socket weld ends, Group IV with provision for "Lock Closed"	ea	490.00	2940.00	
		<u>TAG NO.</u> <u>SYSTEM DESIG</u>				
		V-6-133, V-6-134, SA-2(NQ-2)				
		V-6-135, V-6-137, V-6-138				

EXHIBIT 1-2 (CONTINUED NEXT PAGE)

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR2299-177

(PURCHASE ORDER #)

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE SHIPPING MEMORANDA, INVOICES (IN QUADRUPLES) PACKAGES AND CONTAINERS.

6/8/67

(DATE)

2299-45

(REQUISITION #) (WORK ORDER #)

PAGE 2 OF 3 PAGES

TO BERGEN INDUSTRIAL COMPANY

ITEM NO. CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCO. NUMB.
395	2	1" Globe Valves, socket welds, Group XId <u>TAG NO.</u> <u>SYSTEM DESIG</u> V-22-215, V-22-216 NV-1	ea	\$322.50	645 00	
396	1	1/2" Globe Valve, socket weld ends, <u>TAG NO.</u> <u>SYSTEM DESIG</u> Group XId V-22-209 NV-13	ea	107.80	107 80	
397	14	2" Check Valves, socket weld. ends, Group IV <u>TAG NO.</u> <u>SYSTEM DESIG</u> V-22-141, V-22-144 SD-1 V-22-171, V-22-177 V-22-173, V-22-175 V-22-177, V-22-179 V-22-181 V-22-146, V-22-148 NV-27 V-22-166, V-22-168 NV-8 V-22-170, V-22-189	ea	210.00	2940 00	
398	1	1-1/2" Check Valve, socket weld ends <u>TAG NO.</u> <u>SYSTEM DESIG</u> Group XId V-22-217 NV-2	ea	284.00	284. 00	
399	4	2" Gate Valve, socket weld ends, Group No. XId <u>TAG NO.</u> <u>SYSTEM DESIG</u> V-22-3, V-22-4 Drywell Eq. Drain Lines V-22-11, V-22-12	ea	374.80	1499 20	
400	4	1/2" Diaph-Gate Valve, socket weld ends, Group IXa <u>TAG NO.</u> <u>SYSTEM DESIG</u> V-12-36, V-12-37 WD-2 V-12-42, V-12-43	ea	73.60	294 40	
403	3	2" Diaphragm Valves, screwed ends, Group IXc TAG: Service Box-Demin Water SYSTEM DESIG: WD-3	ea	151.00	453 00	
404	8	3/4" Diaphragm Valves, screwed ends, Group IXc TAG: Service Box-Desin Water SYSTEM DESIG: WD-3	ea	62.10	496 80	

CONTINUED NEXT PAGE

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR-2299-177

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, IN QUADRUPLES, PACKAGES AND CONTAINERS.



TO
BERGEN INDUSTRIAL COMPANY

PAGE 3 OF 3 PAGES

6/8/67

(DATE)

2299-45

REQUISITION #1 WORK ORDER #1

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOU NUMBER
405	20	3/4" Gate Valves, screwed ends, Group IV TAG: Service Box-Service Air SYSTEM DESIG: SA-2	ea.	44.00	880 00	
406	50	3/4" Globe Valves, Socket wold ends, TAG:NO. SA-2 Group IV SYSTEM DESIG: SA-2	ea.	166.40	8,320 00	
407	6	3" Diaphragm Valves, screwed ends, Group IXc TAG: Service Box CH-7 SYSTEM DESIG: CH-7	ea.	548.30	3,289 80	
408	3	1-1/2" Diaphragm Valves, screwed ends TAG: Service Box CH-7 SYSTEM DESIG: CH-7	ea.	112.10	336 30	
409	8	3/4" Diaphragm Valves, screwed ends Group IXc TAG: Service Box CH-7 SYSTEM DESIG: CH-7	ea.	62.10	496 80	
TOTAL ORDER PRICE.					\$24,796 10	

FOR: Warehouse, East Patterson, New Jersey

SHIPPING CHARGES: Prepay truck charges to job site and add to your invoice as a separate item or invoice separately. Kindly attach copy of Freight Bill to your invoice.

DRAWINGS: Kindly furnish within two (2) weeks five (5) copies of drawings for our approval. Drawing must show item number and tag number of each valve and must be for the valve size and valve rating of the item only, reference to other sizes and rating must be blocked out. After our approval, eighteen (18) copies shall be furnished for our distribution. Drawings should be addressed to the attention of our Mr. J. W. RIDDINGTON.

INSTRUCTION MANUALS: Kindly furnish thirty-five (35) copies of Operations and Maintenance Instructions for each valve furnished.

SPARE PARTS: Kindly furnish your quotation covering one (1) year of operational spare parts for the valves furnished on this order.

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF THIS ORDER.

IMPORTANT

BURNS AND ROE

ACKNOWLEDGE RECEIPT OF ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED.

BY L. J. Purshacker
(PURCHASING AGENT)

EXHIBIT L-2 (3 of 10000)

CHANGE ORDER

(THIS IS NOT A PURCHASE ORDER BUT IS YOUR AUTHORITY TO MODIFY, CHANGE, CANCEL, OR CORRECT THE ORIGINAL PURCHASE ORDER.)

BURNS AND ROE

700 Kinderkamack Road
Oradell, New Jersey

366



1
(CHANGE ORDER #)
IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, (IN QUADRUPLET) PACKAGES AND CONTAINERS
July 17, 1967
(DATE)
2299-45
(REQUISITION #) (WORK ORDER #)
(SHIP VIA)
(P.O.N.)
(SHIPPING DATE)
(YOUR QUOTATION #)
(DATE) (TERMS)

NOTICE
THIS CHANGE ORDER
AUTHORIZES CHANGES
ON PURCHASE ORDER #
BR-2293-177



Bergen Industrial Co.
14 Stefanie Avenue
East Paterson, New Jersey
Att: Mr. M. Hills

SHIP TO _____

MAIL INVOICE IN QUADRUPPLICATE TO _____

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
		<p>This change order is issued to cover the following on Page 2 of 3 pages of the original purchase order.</p> <p>Item #397 14 2" Check Valves Socket Weld Ends, Group IV</p> <p>Cancel (1) tag #V-22-177 no money involved, since the number appeared twice on original order.</p> <p>Change the remaining tag #V-22-177 to tag #V-22-117, again no value involved.</p> <p>All other conditions remain the same.</p> <p>FOR RECORD PURPOSES ONLY. HAS ALREADY BEEN SHIPPED.</p>				

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF ASSOCIATED PURCHASE ORDER.

IMPORTANT

BURNS AND ROE

ACKNOWLEDGE RECEIPT OF CHANGE ORDER. NOTIFY IF UNABLE TO HAVE SHIPPED AS SPECIFIED.

Handwritten signature/initials

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07049

BR-2299-304

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, IN QUADRUPLETE! PACKAGES AND CONTAINERS

July 17, 1967

(DATE)

2299-45

(REQUISITION #) (WORK ORDER #)

Own Truck

(SHIP VIA)

Paterson, N.J.

(P.O.#)

one week

(SHIPPING DATE)

2%/10 Net 30days

(TERMS)

Page 1 of 2

Bergen Industrial Supply Co., Inc.
14 Stefanic Avenue
East Paterson, New Jersey

Att: Jpe Cal

SHIP TO Burns and Roe, Inc., c/o Jersey Central Power & Light Co.

Forked River, Oyster Creek, New Jersey Att: Mr. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO ~~703 DORSETT ROAD, NEWARK, N.J. 07102~~ AS ABOVE

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
This purchase order is issued to cover the following:						
<u>Specification S-2299-55</u>						
161	4	1" Gate valve SW ends Group V	ea.	13.00	52 00	
162	2	1/2 SW-3 V-3-147, -148 Globe end connections S Group V	ea.	52.00	104 00	
<u>Specification S-2299-61</u>						
419	8	1" Globe valves SW ends Group XI a	ea.	115.60	924 80	
418	10	1" ditto	ea.	115.60	1,156 00	
321	1	4" butterfly valve FF	ea.	58.00	58 00	
416	1	2" Globe valve SW ends Group IV	ea.	294.00	294 00	
420	2	3/4 MS V-1-135, 136 Globe valve SW Group # 1	ea.	62.20	124 40	
421	2	1/2 Globe valves SW Group #10	ea.	52.00	104 00	
422	1	Mark V 24 - 27 - 28	ea.	176.10	176 10	
423	1	2 1/2" DO V 36 1 Gate valve BW ends Group IV	ea.	183.75	183 75	

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF THIS ORDER.

IMPORTANT

EXHIBIT 4-3 (1 of 3 pages)

ACKNOWLEDGE RECEIPT OF ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED

[Signature]

PURCHASE ORDER

BURNS AND ROE
ORADELL, NEW JERSEY 07649

BR-2299-304

(PURCHASE ORDER #)

IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, IN QUADRUPLET PACKAGES AND CONTAINERS.

July 17, 1967

(DATE)

2299-45

(REQUISITION #) (WORK ORDER #)

(SHIP VIA)

(F.O.B.)

(SHIPPING DATE)

(TERMS)

TO Bergen Industrial Supply Co., Inc.

*CORE SPRAY SYSTEMS
LOCATED DOWNSTREAM
BOOSTER PUMPS*

SHIP TO

MAIL INVOICE IN QUADRUPPLICATE TO 700 KINDERKAMACK ROAD, ORADELL, NEW JERSEY 07649

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOU. NUMB.
276	6	10" Check valves tag Group III	ea.	1096.00	6,576 00	
426	10	3/4" V-25-24, 25, 26, 27, 28, 29, 30, 31, 32, 33 Globe SW Group X	ea.	115.60	1,156 00	
		Total			10,909 05	

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF THIS ORDER.

IMPORTANT

ACKNOWLEDGE RECEIPT OF ORDER.
NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED

EXHIBIT 4-3 (2 of 3 pages)

BY *[Signature]*
(PURCHASING AGENT)

CHANGE ORDER

(THIS IS NOT A PURCHASE ORDER BUT IS YOUR AUTHORITY TO MODIFY, CHANGE, CANCEL OR CORRECT THE ORIGINAL PURCHASE ORDER.)

BURNS AND ROE
 700 Kinderkamack Road
 Oradell, New Jersey

1	
CHANGE ORDER #1	
IMPORTANT: THIS NUMBER MUST APPEAR ON ALL CORRESPONDENCE, SHIPPING MEMORANDA, INVOICES, (IM QUADRUPPLICATE) PACKAGES AND CONTAINERS	
August 15, 1967 (DATE)	
2299-45	
REQUISITION #1	WORK ORDER #1
Parcel Post (SHIP VIA)	
Paterson, N. J. (F.O.B.)	
August 17, 1967 (SHIPPING DATE)	
YOUR QUOTATION #1	
2%/10 Net 30days (DATE) (TERMS)	

TO BERGEN INDUSTRIAL SUPPLY CO.
 14 Stefonic Avenue
 East Paterson, New Jersey

Att: Mrs. M. Hilla

NOTICE
 THIS CHANGE ORDER
 AUTHORIZES CHANGES
 ON PURCHASE ORDER #
 2299-304

SHIP TO Burns and Roe, Inc. c/o Jersey Central Power & Light Company
 Forked River, Oyster Creek, New Jersey, Att: Mr. Clayton

MAIL INVOICE IN QUADRUPPLICATE TO

ITEM OR CODE	QUANTITY	DESCRIPTION	UNIT	UNIT PRICE	AMOUNT	ACCOUNT NUMBER
<u>CONFIRMING ORDER</u>						
<u>DO NOT DUPLICATE</u>						
This amendment is issued to include the following						
427	2	1" Globe Valves System design CA Mark Number V-6-16-17 End Connection S Group V Specification S-2299-61	ea	\$25.16	\$50 32	
TOTAL THIS CHANGE					\$50 32	
PREVIOUS TOTAL					\$10,909 05	
REVISED TOTAL					<u>\$10,959 37</u>	

THE ACCEPTANCE OF THIS ORDER IS SUBJECT TO THE TERMS, CONDITIONS, AND INSTRUCTIONS PRINTED ON THE FACE AND REVERSE OF ASSOCIATED PURCHASE ORDER.

IMPORTANT

ACKNOWLEDGE RECEIPT OF CHANGE ORDER.
 NOTIFY IF UNABLE TO MAKE SHIPMENT AS SPECIFIED.

EXHIBIT L-3 (3 of 3 pages)
 BURNS AND ROE
 BY: *L. J. Perbacker*

MAY 14 1969

OFFICIAL USE ONLY

Milton Shaw, Director
Division of Reactor Development and Technology

INFORMATION CONCERNING COMPLIANCE PIPING INVESTIGATION AT THE JERSEY
CENTRAL POWER AND LIGHT COMPANY REACTOR FACILITY

The enclosed memorandum from our Region I (Newark) Office is forwarded
for your information in accordance with our previous conversation.
This supplements the information provided to Merson Booth by Jim O'Reilly
on Friday, May 9.

A copy of the enclosure was provided Ellyson Outtes, INS, at his request
on May 12, 1969.

Original signed by
L. D. Low

Lawrence D. Low, Director
Division of Compliance

Enclosure:
Memo dtd 5/9/69
CO:I to CO:HQ, OUD

cc w/encl:
R. H. Engelken, CO
M. Booth, RDT
J. P. O'Reilly, CO

bcc: P. A. Morris, DRL
E. G. Case, DRS
R. Carlson, CO:I

B304070344 690610
PDR ADOCK 03000219
G

OFFICE ▶	CO	OFFICIAL USE ONLY	CO	
SURNAME ▶	JPO'Reilly:ed		RHEngelken	
DATE ▶	5/13/69		5/13/69	



UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE
REGION I
970 BROAD STREET
NEWARK, NEW JERSEY 07102

201 645. 3944

OCT 9 1969

J. P. O'Reilly, Chief, Reactor Inspection
and Enforcement Branch, Division of Compliance, HQ

JERSEY CENTRAL POWER AND LIGHT COMPANY (OYSTER CREEK 1)
DOCKET NO. 50-219

Transmitted herewith for your information and appropriate action is the report of the investigation of statements by Alan H. Galer, Radio News Director, Station WJLK, Asbury Park, New Jersey. Mr. Galer had first communicated his information to the Honorable William T. Cahill, Representative, Sixth Congressional District, New Jersey who in turn, passed it on to Mr. L. D. Low for verification.

Interviews with Messrs. William Major and James Smith who were reportedly cognizant of the alleged piping problem at OC-1, did not develop any information of safety significance or any information not previously known to CO through previous inspections or investigations.

Regarding the matter of the "transferred GE inspector", the one person identified, Charles Smith, is known by the writer as having been both conscientious and competent while at OC-1 and to have been transferred to the Millstone 1 project at a point when his area of assignment at OC-1 was essentially complete.

One additional allegation, not treated in the report, was given by Mr. James Brown, Assistant Editor and Feature Writer, Asbury Park Press, in a telecon to CO:I on July 31, 1969. This allegation related to a condition in the main condenser; specifically, the condenser tubes were said to have not been properly connected to the tube sheets. This matter was resolved to the satisfaction of CO in telecons between representatives of CO:I and Messrs. Low and Engelken.

This office has been informed by Mr. Low that subsequent to this investigation and to the discussions on the allegation relating to the main condenser, he had informed both Messrs. Cahill and Brown that our investigation into these matters failed to reveal anything of safety significance not previously known to CO. Further, that our concerns in these areas had been resolved by the licensee.

R. T. Carlson
R. T. Carlson
Senior Reactor Inspector

*IS/RAC rep. copy
O'R 11/4/69
JAX
GTL
LX*

Enclosure:
Compliance Investigation Rpt.

9 7265

B304070083 691104
PDR ADOCK 05000219
P PDR

U. S. ATOMIC ENERGY COMMISSION

Division of Compliance

Region I

Compliance Investigation Report

Licensee: JERSEY CENTRAL POWER & LIGHT COMPANY
Oyster Creek Unit No. 1
Lacey Township, New Jersey

License No.: DPR-16
Docket No. 50-219

Type of Case: Suspected Violation
Allegations that leaking pipes were installed at Oyster Creek, that construction costs were falsified, that racketeering is prevalent and that construction materials were stolen from site.

Period of Investigation: July 30 and 31, 1969

Investigator: Alvin F. Ryan
Alvin F. Ryan, Investigation Specialist

10/2/69
Date

Investigator: Robert T. Carlson
Robert T. Carlson, Senior Reactor Inspector

10/2/69
Date

Reviewed By: Robert T. Carlson
Robert T. Carlson, Senior Reactor Inspector

10/2/69
Date

July 30, 1969

Jersey Central Power & Light Co.
Nuclear Generating Station
Lacey Township, N.J.

SAFETY

A source advises that an inspector who checked the plant discovered defective piping and filed a report on this. Subsequently, he was either transferred, or fired from his job.

The following reports of defects in the plant were documented by examination of files of news stories written during construction:

Nov. 11, 1967 Nucleonics Week magazine officials charge that welding flaws were detected in 108 of the 137 fuel ~~assemblies~~ rod control assemblies. Leonard Koke, resident manager for General Electric, commented: "We don't think it's a serious matter." Minimizing the problem, he declared "all of the cracks are expected to be fully ground out by the middle of next week." (See clipping).

Nov. 21, 1967 Raymond Dickeman, in charge of GE's turnkey projects, declared: "The delay will only amount to a few weeks instead of months. The trouble is minimal, poses no hazard, won't cost much money and is generally common in the industry." (See clipping). Also Dec. 12, 1967.

Feb. 13, 1968 A company spokesman said yesterday workmen can begin fueling the nuclear reactor about Aug. 15 if repairs to faulty welds can be completed by June 1. The spokesman said yesterday General Electric Co., which is building the plant, has ordered all joints at the base of the reactor vessel rewelded. When this is done, the welds will be clad in stainless steel as a precautionary measure. (See clipping).

May 10, 1968 The Jersey Central Power and Light Co. is continuing ~~its~~ its study to determine the cause of "leaks" which developed in piping at its nuclear generating station being built at Oyster Creek in Lacey Township. George Ritter, JCP&L vice president, blamed the leaks on some form of "stress corrosion," but said the cause wasn't known. (See clipping).

EXHIBIT A

Completion of the plant is about two years behind schedule and much of the delay was caused by the reactor defects, despite GE claims that they were "minimal."

Feb. 4, 1968 A spokesman for GE attributes the delay primarily to repair work. "Welding repair work, now under way will take about three weeks." (This was essentially what GE said in November 1967.). (See clipping).

COSTS

The Jersey Central Power & Light Co. is presently seeking a 13% rate increase but denies that the increased costs of Oyster Creek plant are related. However, William G. Kuhns, president of General Public Utilities Corp.--which owns JCP&L--recently revealed that failure to have Oyster Creek in operation is costing company \$60,000 a day to buy power from other utilities.

In story of Feb. 4, 1968, a GE spokesman was quoted as saying that GE assumes full cost responsibility for plant. "We have agreed to design and construct a fully operable nuclear power station for a fixed price."

This price was about \$68 million. However this much money had apparently been expended by the end of 1967 and there are now reports that the cost has exceeded \$100 million.

The state Board of Public Utility Commissioners says it has no copy of the contract between GE and JCP&L, although a copy was shown confidentially to the commissioners. PUC also says that the same arrangement was made with the Atomic Energy Commission. This appears confirmed by following stories:

Dec. 8, 1965 Leo Goodman, representing AFL-CIO, charged at a PUC hearing that contract be kept secret, barring determination of whether electricity costs will be competitive.

Feb. 20, 1965 The Atomic Safety and Licensing Board directed the company provide "for confidential review" a copy of its construction contract with General Electric. (See clippings)

Neither GE nor JCP&L officials will provide figures on the cost of the plant. There are widespread rumors about thefts of materials from the plant; that material from the site and labor have been used in the construction of several private homes in the area.

On May 9, 1969, Lacey Township Police Chief Patrick J. Geraghty told an Asbury Park Press reporter that in 1967 he and Lacey Township Committeeman John C. Parker established K-C Constructors Inc. on the advice of North Jersey "labor workers and organizers." This company then got a subcontract from GE, Geraghty said.

According to another source, Chief Geraghty made statements at township meetings that he received gifts worth thousands of dollars from contractors at the power plant because "they were good friends." Gifts the chief allegedly admitted getting included form plywood and framing from the White Construction Co. Source says chief also said he "had permission" to take all scrap steel left on job for John Parker, and this included 60 to 90-foot H beams, I beams, steel sheet piling, and piping.

Theft of materials plus ten strikes between Feb. 13, 1965 and Jan. 24, 1968 certainly added to the cost of the project. The strikes involved electrical workers, carpenters, operating engineers, boiler-makers, pipefitters, and ironworkers. Strikes allegedly cost up to \$40,000 a day.

There should be full public disclosure of the costs of the project, the losses from thievery and from labor trouble.

(GE has discontinued turnkey projects since this one, but denies it is because of heavy loss at Oyster Creek).

jsb

Lacey Plant May FEB 13 1968 Open Next Winter

LACEY TOWNSHIP — It will be clad in a stainless steel
may be closed winter before Jer. as a precautionary measure.

General Power & Light
Co.'s nuclear-powered generat-
ing station is in commercial
operation.

A company spokesman said
yesterday workmen can begin
fueling the nuclear reactor
about Aug. 15 if repairs to
leaky welds can be completed
by June 1. Construction of the
\$70 million plant has been de-
layed both by strikes and
cracks in welds on 108 pipes
connecting the reactor vessel
and a dry well.

When construction began in
October 1964, the company had
expected to be operating the
60,000 kilowatt generator by
next May. Company officials
had counted on the new plant
to supplement existing generat-
ing stations in meeting peak
power demands expected next
summer.

The spokesman said yester-
day General Electric Co., which
is building the plant, has or-
dered all joints at the base of
the reactor vessel rewelded.
When this is done, the welds

The cracks are one-twenty-
fifth of an inch thick. They
were discovered during pres-
sure tests last fall, when the
vessel was filled with water un-
der pressure.

If the new welds pass the
required tests, the company
will seek a Federal Atomic
Energy Commission permit to
begin loading 121 tons of ura-
nium dioxide pellets into the
core of the reactor.

This operation is expected
to cost \$17 million. The fuel
has been stockpiled at the site
since December.

"Based on this schedule, we
can be in operation by the end
of next year, the JCP&L spokes-
man said.

Earlier this month, con-
struction officials said the plant
was 96 per cent completed and
may be operating within six
months.

The company plans to build
a second nuclear powered gen-
erating station here by 1973.
This will cost an estimated \$130
million, and have a generating
capacity of 20,000 kilowatts.

6146

No Cracks In Reactor, Aide Claims

LACEY TOWNSHIP — Raymond L. Dickeman, General Electric Corp. Turnkey Projects manager, last night told the Asbury Park Press "We are aware of no cracks in the reactor vessel at the Jersey Central Power & Light Co.'s nuclear generating station being built here."

Speaking by telephone from his San Jose, Calif. office, Mr. Dickeman also vigorously denied reports that repairs to 108 leaky pipes in the 640,000-kilowatt nuclear generating plant would delay construction of the facility by at least nine months. 1/12/67

"I don't know how such a report came into being," Mr. Dickeman said. "Every report we have indicates the present repair work schedule will only cause a delay of a couple of weeks at most. 6186

"Since launching our repair work schedule," Mr. Dickeman continued, "We have had a series of meetings concerning the repair process with various atomic energy agencies. We are going forward with an investigative program of these repairs which aren't inordinately complicated."

Repair Work Proceeding

"The repair work is proceeding at the convenience of the entire project. These repairs needn't necessarily be completed by the end of December, but the work will throw us off our predicted completion date. It's the investigative process which will lead to a short delay."

Early last evening, Keith
See CRACKS Page 2

CRACKS

From Page 1

Clayton, plant manager, refused to comment on the situation.

"In order to strict orders not to make any comments whatsoever concerning the situation," Mr. Clayton told an Asbury Park Press reporter who visited the plant.

Asked who issued the order, Mr. Clayton said, "Those orders came directly from Mr. Dickeman."

Mr. Clayton did comment however, on a short lived two-hour strike at the plant last Friday by members of the electrical union and part of the pipe fitters union. He said the strike was the result of a dispute over the scheduling of work hours. "It didn't amount to much. The issue was quickly resolved to the satisfaction of everyone concerned," Mr. Clayton said.

Denied Initial Reports

Officials of the corporation denied reports Nov. 11 of serious flaws in the reactor vessel at the Jersey Central Power & Light Co.'s station.

Leonard Koke, GE resident manager, said a leaking weld can be repaired with "a slight delay in construction," he said the \$68 million plant is still expected to be completed late in December or early in January.

The flaws were revealed by officials of Nucleonics Week Magazine at the recent American Nuclear Society's Atomic Industrial Forum in Chicago. The magazine said flaws had been detected in 108 of the 137 fuel rod control assemblies.

Mr. Dickeman two weeks ago told the Asbury Park Press that "reports of such flaws at the Forked River nuclear plant have been blown out of proportion. Last night he said GE had built about 20 such plants throughout the world, half of them for commercial use and the others for governments."

L. Ottinger (N.Y.)

CONTROL NUMBER 2277

ACTION COMPLETION DEADLINE

DATE OF DOCUMENT undated

FILE LOCATION

ACTION PROCESSING DATES

Acknowledged _____
Interim Report _____
Final _____

INFORMATIONAL COPY DISTRIBUTION

___Chairman ___ADMS ___COM
___GM ___ADA ___SS
___Dep. Dir. ___OGC ___SIR
___A. D. ___RI ___ML

DESCRIPTION Ltr Original Copy Other

Req. complete report on the nature of the weld and metal millers problems at Oyster Creek No. 1. Also requests info re releases of radioactive material into the atmosphere and Barnegat Bay.

GM 11775

REMARKS

Prepare reply for signature of Director of Regulation

REFERRED TO	DATE
is direction	8/1/69
Price	
Beck	
Renn	
Menderson	
Shaper	
Low	
WENZEL	FDR (50-219)

In notification to the JOAE

DO NOT DETACH THIS CARD

DIRECTOR OF REGULATION AND SAFETY CONTROL

Form HQ-32 (7-64)
U. S. AEC

L. Ottinger (N.Y.)

CONTROL NUMBER 2277

ACTION COMPLETION DEADLINE

DATE OF DOCUMENT dated

FILE LOCATION

ACTION PROCESSING DATES

INFORMATIONAL COPY DISTRIBUTION

Acknowledged
Interim Report
Final

Chairman ADNS COM
GM ADA SS
Dep. Dir. OGC SLR
A. D. RI MI

AEC

DESCRIPTION Ltr Original Copy Other

REMARKS

Req. complete report on the nature of the weld and metal failure problems at Oyster Creek No. 1. Also requests info re releases of radioactive material into the atmosphere and Berneget Bay.

Prepare reply for signature of Director of Regulation

GM 11775

Is notification to the JCAR
recovered

REFERRED TO	DATE
Morris E. Beckman	8/1/59
Cps: HPrice	
Beck	
Henn	
Henderson	
Shaper	
Low	
XXXXXXXX	FDR (50-219)

DIRECTOR OF REGULATION AND SAFETY CONTROL

Form HQ-32 (7-64)
U. S. AEC

DO NOT DETACH THIS CARD

RICHARD L. OTTINGER
22nd DISTRICT, New York

129 CANNON BUILDING
(202) 225-8936

COMMITTEE ON
INTERSTATE AND FOREIGN
COMMERCE

SUBCOMMITTEE ON
COMMUNICATIONS AND POWER

Congress of the United States
House of Representatives
Washington, D.C. 20515

SOUTHERN DISTRICT OFFICE:
ROOM 214 MAIN POST OFFICE
YONKERS, NEW YORK 10701
(914) YO 5-0300

CENTRAL DISTRICT OFFICE:
37 NORTH CENTRAL AVENUE
ELMSFORD, NEW YORK 10523
(914) 892-6416

NORTHERN DISTRICT OFFICE:
80 MAIN STREET
BREWSTER, NEW YORK 10806
(914) BR 9-8089

Atomic Energy Commission
Washington, D. C. 20545

Re: Oyster Creek No. 1
Nuclear Power Plant

Gentlemen:

It has come to my attention that the above nuclear power plant has had a number of problems from supposedly bad welds and metal failure. I also understand that tests were performed to see how the repairs might be made, but the corrodents were never identified.

I would appreciate receiving from the Commission a complete report on the nature of the weld and metal problems at this plant and what attempts have been made to identify the corrodents and to solve the problems. There is also concern that this plant will release radioactive material into the atmosphere and liquid solids on a batch basis into Barnegut Bay. Information as to the probability of this occurrence will also be greatly appreciated.

*151 DL 8/5/69
RNE
LE
CR*

Sincerely,

Richard L. Ottinger
Richard L. Ottinger
Member of Congress

RLO/ss



B304070138 691104
PDR ADOCK 05000219
P PDR

Rec'd Off. Dir. of Reg.
Date 8/1/69
Time 11:30

50-219

R. F. Fraley
Executive Secretary, ACRS
1034 H Street

RE: EXTERIOR PHOTOGRAPHS OF THE METROPOLITAN
PLUMBING SUPPLY COMPANY, LONG ISLAND CITY,
NEW YORK

In accordance with your recent request, enclosed
are colored prints of five photographs taken of
the exterior of the Metropolitan Plumbing Supply
Company, Long Island City, New York--one of the
suppliers of valves for the Oyster Creek reactor.

Enclosure:
5 prints

Original signed by
R. H. Engelken

R. H. Engelken, CO

8/1/69

~~8304070144 691104~~
PDR ADDCK 05000219
P PDR

*General
50-219*

OFFICE ▶	CO				
SURNAME ▶	RH Engelken:ej				
DATE ▶	8/1/69				

50-219

DIVISION OF COMPLIANCE MONTHLY REPORT, JULY 1969

Jersey Central Power and Light Company (Oyster Creek) - An inspection was conducted on July 17 and 18 to observe testing techniques and to review the test results relating to the additional inspections performed on ATAPCO pipe and fittings within the drywell. The test procedures for the required UT and PT inspections were found to be in accordance with applicable standards. The test results met applicable requirements.

Inspections were made at GE-San Jose and at X-Ray Engineering in San Mateo, California, on July 16-18 to review the results of radiography being conducted on 18 safety valves supplied by Ingersoll Industries. Sixteen of the 18 valves will be selected for use at Oyster Creek. Radiography results showed some hot tears in the base castings which would classify the castings as ASTM E71 Class 4. Each valve is being evaluated individually (by GE and to the satisfaction of the regulatory staff) as to its acceptability for nuclear service.

An inspection was made at the site on July 23 to review the results of recent leak rate tests of the main steam isolation valves and the reactor building. Each of the four main steam valves meets the leak rate limit of 5 per cent of the allowable containment leakage of 20 psig. Disassembly and machining were required on three of the four valves. The reactor building has been leak tested both with the inner and outer railroad airlock doors closed and with the inner door open. The tests were performed with the doors held closed by means of makeshift equipment. A permanent sealing arrangement is being installed. Additional leak rate testing is required and is scheduled to be conducted before power operations are initiated.

DIVISION OF COMPLIANCE MONTHLY REPORT, JULY 1969

Dresser Industrial Valve and Instrument Company, Alexandria, La. -
The Dresser Valve Shop was visited on July 17 to obtain specific information on specifications, nondestructive testing, and acceptance standards for reactor primary system safety valves. It was found that the body castings used in the valves supplied for Oyster Creek, Millstone, and Dresden 2 will not meet Class II radiographic standards.

file
7/30/69 ej

RE: JERSEY CENTRAL AND RYAN INTERVIEWS

Essence of a telephone conversation on 7/30/69, 12:00 noon, between J. Carlson (CO:I) at Headquarters, and J. Ryan (CO:I investigator) calling from Asbury Park press in New Jersey.

RYAN: These are the names of the five people with whom we had interviews this morning:

- Jim Brown - Assistant Editorial and Feature Writer
- John Ladwig - Reporter
- Larry Crowley - Reporter
- Dan Lass - Assistant Managing Editor
- Alan H. Galer - Radio News Director

These men are all connected with the Asbury Park press. They again repeated the information given yesterday by Galer to Low, to the effect that about a year ago an inspection was made at Oyster Creek by a GE inspector who had X rays taken and the pipes were found to be defective.

CARLSON: Did they talk about what motivated the visit?

RYAN: Yes. They mentioned that a foreman, James Smith, member of Local 331 Steamfitters Union, Neptune, New Jersey had called for the X ray test of the pipe. When the GE inspector is supposed to have submitted his report, he was transferred, fired, etc.; we don't know what happened.

CARLSON: Don't we know the name of the inspector?

RYAN: No. They gave me the names of Smith and a William Major, head of the Major Construction Company, 536 Skylark Drive, Toms River, New Jersey, telephone: 201-349-7591. Major was present when X rays were made.

CARLSON: In what capacity?

RYAN: I don't know. He saw and heard the examiner state that the material was inferior.

CARLSON: Do they know about the system?

RYAN: They know nothing about the system or piping. Recently JCPL made application for an increase in rate, originally about a 2% average. Last week it had become a 13% increase. JCPL says this has nothing to do with

the Oyster Creek reactor but people here are making allegations of all kinds of arrangements have been made with regard to materials going to different people other than those authorized; kick backs, etc., all of which go into the cost of the reactor. They want us to look into it.

CARLSON: These five gentlemen got all the information from Smith and Major?

RYAN: Not all five. Crowley is the one who made the statement about the inspection being made by the GE inspector. Galer identified Major as the individual who was present. Jim Smith, according to Galer, had been employed as a foreman at the site. He doesn't know whether he is still there. He is the man who was supposed to have requested that the examination be done.

CARLSON: When did Galer and Crowley get wind of this?

RYAN: They have a whole series of things going back to November 1967, beginning with the Nucleonics Weekly, a story on stub tube problems. I also have here a 3-4 page summary of various news articles and background information. It adds up to about this:

1. November 1967, Nucleonics Week article on stub tube problems (11/21)
2. December 12, 1967 - an article quoting Raymond Dikeman and appearing in the Asbury Press.

CARLSON: Did Asbury Press make any reference to the Nucleonics article?

RYAN: Let Me check. The November 21, 1967 quote relates to the Nucleonics Week story and quotes Dikeman and the JCPL people. Mr. Brown gave me the following compilation and he put it together:

1. November 1967 Nucleonics Week article on stub tube problems
2. November 21, 1967 and December 12, 1967 articles from the Press quoting Dikeman re the delay being only a matter of a few weeks instead of months.
3. February 13, 1968 - a quote to the effect that about August 15 the reactor would be ready for refueling.
4. May 10, 1968 - JCPL is continuing to study to determine the cause of leaks which developed in the piping at the generating station at Oyster Creek. Ritter blames leaks on stress corrosion but the cause is not known. Also stated is that the completion of the plant is about two years behind schedule.

5. February 4, 1968 - a spokesman for GE says that the delay is primarily due to repair work having to be made which will take about three weeks
6. July 30, 1969 - quoting from the summary - a copy of the contract was confidentially seen by the Commission.
7. December 8, 1965 - Leo Goodman, AFL CIO charged that the contract was being kept secret.
8. February 20, 1965 - ~~As~~ ATELB confidentially reviewed a copy of the construction contract with GE.
9. Also in summary are the following: rumors of thefts from plants (summary is of articles published in the Asbury Park Press).

CARLSON: Did ~~you~~ they give you any more details on the defective piping?

RYAN: No, other than the story in the article.

CARLSON: How was everything left?

RYAN: They asked us if we would be conducting an investigation. I said that under our groundrules this would ~~not~~ be done, that a number of allegations pointed out toward criminal matters and that these would be a matter for the Bureau to handle, and not for us. It was again mentioned that these were rumors and that there was no concrete evidence of theft or that the police force passed on every security guard, or that of the \$3 an hour spent for psy, the man got only \$2 and \$1 went to someone else; or that the Mafia was involved.

CARLSON: You indicated that under our groundrules we would not be getting back to them?

RYAN: I told them that investigations and results of investigations are excluded from the PDR. They wanted to know what the jurisdiction of the AEC was. I said that we had licensing authority for construction. They wanted to know if we didn't have standards to follow. I said that these are written in the contract and how they are enforced I didn't know but that we (Compliance) did not get involved in areas we had no jurisdiction of.

CARLSON: Were they happy?

RYAN: They were glad to know that we were involved more in the matter than they originally thought. Chiefly, what is to be considered are:

1. The rate increase.
2. The unfounded rumors of theft.
3. Allegations of kick back.
4. Allegations of defective material.

CARLSON: What are the main areas of concern, for example, this Smith and Major?

RYAN: How the defective pipe got in and if it is, why was it not replaced. Someone was lax in supervision.

CARLSON: Did the discussion have any extra emphasis on this or on all allegations equally?

RYAN: The emphasis was on Chief Garrity's (spelling) actions and his present mode of living (luxurious). Where do I go from here?

CARLSON: We will get to that later. Did they speak at all about the article that was going to be published?

RYAN: No. We did not discuss what they were going to publish. I made it clear to them that I had no official authority to make any statements in behalf of the Commission or anyone else and we mutually agreed not to publish any statements made to one another. I said that we have a problem of determining who has jurisdiction over what and that if I could establish anything that related to the reactor and that was within our "charter", that we would look into it. They agreed that this was a reasonable approach.

CARLSON: Did you indicate a possible interest of getting with Smith or Major?

RYAN: I said that this would be determined by Headquarters and that I had been sent down only to interview.

CARLSON: You might want to pull all of this together for a trip report but not in final form yet.

conversation ended.

July 31, 1969

Telephone conversation with Carlson and Ryan, CO:I. Present: Low, Engelken, O'Reilly, and Clara Miles

RCarlson - I'll back up to Ryan's interview yesterday with the Asbury Park people. I have reviewed some additional information that Ryan had from that interview. This information consists of a summary sheet of some items that included the allegations regarding defective piping plus a compilation of articles relating to the plant that have been published in their own paper. All this information comes under the heading of SAFETY. The second is entitled COSTS--costs for building the plant--starting off with reference to the 15% increase. This summary sheet apparently was pulled together by the press people specifically to present to _____, July 30, 1969. Attached thereto are a number of articles from their paper (the ones they make reference to). For the most part the section talking about safety just has one or two sentences like - My source advised that an inspector checked the plant, discovered defective pipe, and filed a report. Subsequently he was either transferred or fired from his ~~job~~ job. From here on, under the safety section, there are brief items. These articles for the most part speak to the stub tube problem. The first one references an article of November 11, 1967, from the Nucleonics magazine - we don't think it a serious matter. Another they got from Dickman (spelling) - delay will only amount to a few weeks instead of months. Another article, February 13, ~~1968~~ 1968 re fuel. May 10, 1968 article which says JCPL continuing to study to determine . . . Ritter blamed leaks on stress corrosion. Plant about two years behind schedule. February 4, 1968, article - spokesman for GE contributes delay primarily to repair work. All of these articles speak to stub tube problems and field welds.

The section entitled COSTS - JCPL presently seeking 15% increase but denies cost of Jersey Central related. Kuhn, President . . . cost \$60 ~~thousand~~ thousand a day to buy power. This goes on speaking of costs. It talks about original cost of \$68 million

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and reports that it now costs \$100 million. The Board of Public Utilities says it has no copy of the contract although a copy was shown confidentially to the Commission. The Board also says the same arrangement was made with the Atomic Energy Commission. December 8, 1965 - Leo Goodman representing the AFL-CIO charged that the contract was being kept secret. February 20, 1965 - ASLB asked the company provide for "confidential review" a copy of its contract. Neither GE or JC officials will provide costs of the plant. Material used for private homes in the area.

Lacy Township Police Gherity told an AP reporter in 1967
he and Lacy Township Parker established K-C Const rctors, Inc.
. . . .New Jersey Laborers and Organizers. This company got a sub-
contract from GE.

There is a statement that there should be full disclosure of the costs.

Low - Is this the summary of the article they are getting ready to print?

It

C - Al says not that he is aware of. ~~It~~ was given to him as a summarization of the articles that appeared in their paper.

L - So we do not know what their plans are?

C - That is right. One of these articles speaks to this business recently of Atapco piping. The biggest problem that is summarized is the one with the stub tubes. In my own mind their real interest is to come up with some story that will tie in the cost of building Oyster Creek with this request for rate increase. This allegation that we have been pursuing is only one of many that come into this.

L - I understand.

C - Today we talked with two people--supposedly the source of information for the Asbury Park people. Mr. William Major (they both denied any contact with the Asbury Park people).

At this point Low mentioned that he had asked Galer to open the doors for us to talk with the people that they had talked with and Carlson said that it did not work out that way, etc.

C - It turns out there are two William Majors—father and son. The one we spoke to is the father. He was a boilermaker at the plant. The son is the owner of the Toms River construction firm. (The Asbury Park people identified the owner of the construction firm as being the person who gave them the information.)

L - Why did we not talk to the owner?

C - Carlson then explained about Ryan's telephone call. The lady who answered the phone asked which William Major. She said her husband was the one who worked at the plant.

C - This chap Major (William Major, Sr.) was employed at the site first with the steam fitters and then with the boilermakers from June 66 to about November 1968. Worked both in the _____ building and in the reactor building. His work has been solely with carbon steel, definitely not stainless steel. He worked on _____ penetrations for the emergency condenser system, electrical penetrations and _____ stub tube and installation of the drive. Worked for _____ Doyle and then later for J. A. Jones Construction Company. Jones replaced Doyle. In our discussions with him the only defects of note that he could speak to were those of stub tube problems and then problems experienced by the craftsmen in welding piping in the emergency condenser system. He did not work direct He made reference that this was rolled and welded pip. He made reference to the fact that this came from Tubeco. He made words to the effect that previously he had worked in a lot of conventional plants and they always used seamless piping and this was such an important plant. Since it was such an important plant should it not also be seamless pipe. He went on to relate a specific problem experienced by the welders—still talking about seamless pipe—when you have rolled and welded pipe it comes out somewhat egg shaped and welding this together in the field you run into problems of highs and lows. He was satisfied that whatever problems

they experienced did not go undetected. This was all X-rayed and all detected but that it was a real problem. When asked if he had any knowledge of this specific information, the case of the foreman calling a GE inspector in and then concluding that it was inferior pipe and the inspector was fired, he said he had no specific knowledge of anything in the reactor building but did recall a case where a Burns and Roe inspector by the name of ~~Mid~~ Mike something or other (he could not remember his last name) who left but he does not know why he left or any circumstances surrounding it. He knows of no other inspector who was let go for any reason. That is ~~the~~ basically the gist of our interview with Major.

James Smith - James Smith was employed at the site also on and off from December 1966 to June 1968. Initially for a couple of months was a welder for Doyle and back in March of 1968 first as a steam fitter and then as a foreman until December 1967. At that time all the welders in the employ of Doyle were let go. He could not give any good reason other than they were told they were going to be let go. He came back in again in January of 1968 and worked with Honeywell on instrumentation again as a foreman until June 1968 when he left. During this time as a foreman he worked on the emergency condenser system. He, without prompting from us, at the start of ~~the~~ our interview started talking about the 15% rate increase sought by JC. Had questions about when this plant would get on line and implied that cost of building had some tie-in with rate increase. When we questioned him about the specific problem he said the only thing that he was aware of was again the ~~the~~ stub tube problem and the situation with the condenser piping. When asked if he had any remembrance of a situation involving a foreman and a GE inspector looking at a section of pipe and then being fired, he said no as far as the reactor side of the plant. He said there was one GE guy who left—Charlie Smith (we talked about this yesterday). When asked about any

specific situation involving Charlie Smith he could not recall it. When asked about leaking pipe he said he did not see how any of that could be leaking, that it was all X-rayed and repaired. He was there during hydro testing and said he was involved in this and the only leak was connected with the stub tube problem. When pressed further for any defective pipeline, any rumors, etc., he said one instance of a saddle tee 8" x 10 or 12" , one where ~~the~~ weld crap and so on was on the ~~inside~~ inside where they had not cleaned it out in the shop. He said it was cleaned out in the field but it was a hell of a job. He had one interesting thing—he said just out of curiosity he had one of the radiographers shoot some longitudinal seams. He and Charlie Smith looked at it and it was all right. He put a 99% confidence on that. This goes back to December 1967.

He played the part of a disgruntled workman. He said the articles were unfair when talking about the stub tube problems—the articles said this work was done by steam fitters and it was boiler makers. (He was a steam fitter.) He indicated this was not the only reference made to that.

That basically is the essence of our interview with Smith.

Low - Low then said again that the thing that bothers him is that we had told Galer that we wanted to talk with these two guys and wanted him to make arrangements. &

Carlson - The situation as far as lining them up is as I described it. It was a breakdown in my communicating with Al.

At this point O'Reilly gave Carlson the gist of a telephone call he had just received from Kirkman. Kirkman had received a call from Brown (Asbury Park press) with additional information.

Brown gave Kirkman the name of Charles Smith, identified as a welder. Said the original X-ray company at the site was let go and then they

brought in another. This second company has a reputation for X-rays disappearing. He identified a problem area. The problem area was the condenser. 40,000 tubes in the main air condenser and they have not been properly tied in and also buckling and contaminated water.

Carlson - One of these guys did work briefly in the main condenser.

The guy that worked over there was Major. He started on that side of the house as a steam fitter back in June, July 1966.

Worked first for Allsteel and then Worthington.

O'R - Information on ~~main~~ main condenser was obtained from a man named Crowley. Brown gave three other names - Gibson, from Local 331; LeBlanc; David Smith, foreman on the condenser job. Brown just got this information today. He also brought up Major. He has more dope on the electrical penetration.

At this point Carlson and Ryan were told to Call Kirkman and then stay at the phone until we called them back.

Telephone at the booth - Code 201 892-9520



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Longfellow CO

*→ RE
9/9*

July 29, 1969

Docket No. 50-219

OR

Jersey Central Power & Light Company
Madison Avenue at Punch Bowl Road
Morristown, New Jersey 07960

Attention: Mr. John E. Logan
Vice President

Gentlemen:

We have reviewed the information on the Oyster Creek reactor provided in Amendment No. 53 to your application, dated June 12, 1969. On the basis of our review of this information and after discussions at several meetings held with the representatives of your Company, the General Electric Company, and Burns and Roe, we have concluded that further action is required. This letter confirms our conclusions stated orally to you and your representatives at a meeting held on July 10, 1969, and at earlier meetings.

1. The stainless steel insert inlet nozzle, the forged metal disc, and the valve body casting from the high pressure flange face to the elevation at the center line of the discharge nozzle (with the exception of the outlet nozzle and outlet flange) of each of the 16 six-inch safety valves should be subjected to a radiographic (RT) or ultrasonic (UT) examination and to a liquid penetrant (PT) examination. Magnetic particle (MT) examination procedures may be substituted for the PT examination. The examination techniques and acceptance standards should be documented. The program described above should be completed and the results documented before full power operation may be authorized. This documentation should be available for inspection by AEC representatives. (The above description of parts of valves to be examined applies to the valves which, according to information furnished us by representatives of the General Electric Company, are currently planned to be installed in the plant. The description of parts does not necessarily apply to other makes and models of valves.)

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July 29, 1969

2. Additional inspection is required of the piping described in Amendment No. 53 for which adequate nondestructive testing records are not available. This piping was installed in (a) the emergency condenser, (b) the core spray, and (c) the shutdown cooling systems as described in Amendment No. 53.
 - (a) 100% RT or UT examination of the remainder of unexamined and accessible longitudinal welds of the pipe within the reactor coolant pressure boundary out to the second isolation valve should be performed.
 - (b) For the piping examined in accordance with (a) above, and which has not been previously examined by PT, 100% PT of the longitudinal and girth welds out to the second isolation valve should be performed.
 - (c) Additional tests on the approximately nine feet of 12-inch piping that was removed from the emergency condenser system should be performed as follows:
 - (1) PT of inside and outside surfaces, and
 - (2) determination of the metallographic condition of the base metal and weld material.

The program described above should be completed and the results, including examination techniques and acceptance standards, documented before full power operation may be authorized. This documentation should be available for inspection by AEC representatives.
3. The inspection program conducted on the two 18-inch feed-water valves and the carbon steel fittings in the reactor coolant pressure boundary which you indicated were magnetic particle tested should be confirmed. A description of the examination methods and acceptance standards followed should be documented before full power operation may be authorized. This documentation should be available for inspection by AEC representatives.
4. The procedures and results of the leakage tests conducted at a pressure of 20 psig on the inboard main steam line isolation valves should be documented. The leakage limit


July 29, 1969

for any one valve at a test pressure of 20 psig should not exceed 11.5 cubic feet per hour (cfh). This limit applies to both inboard and outboard valves and corresponds to 5% of the allowable operational leak rate at 20 psig described in Section 4.5 of the Technical Specifications. This information should be documented before full power operation may be authorized and should be available for inspection by AEC representatives.

5. To assist us in our future inspections of the plant operation, a report describing the nondestructive inspection methods used and acceptance standards specified and applied for pipes, fittings, valves and pumps of systems outside the reactor coolant pressure boundary should be provided to the AEC within one year. Results of the inspection and documentation of the inspection methods and acceptance standards should be available for inspection by AEC representatives.

The provisions described in items 4 and 5 above will be reflected in the Technical Specifications for full power operation.

Sincerely,


Peter A. Morris, Director
Division of Reactor Licensing

cc: George F. Trowbridge, Esquire
Shaw, Pittman, Potts,
Trowbridge & Madden

50-219

Harold Price
Dir. of Reg. 7/16
11:30

RESPONSES TO INQUIRY ON OYSTER CREEK

1. Q. Jersey Central has issued a statement saying that its Oyster Creek plant will be held up from full power operation in order to meet AEC's requirements for further inspection of pipes and valves. Is this correct?

A. We have informed Jersey Central orally, and we will confirm in writing, that before we can authorize operation of the Oyster Creek plant beyond the presently-approved five thermal megawatt level additional non-destructive testing will be required on some piping in the engineered safety features inside the reactor coolant pressure boundary. This is within the dry well which encloses the reactor pressure vessel; it is part of the containment system. We also will require additional non-destructive testing of safety valves in the reactor coolant system.

Results of this non-destructive testing ^{will be inspected} must be submitted ~~to~~ the AEC Regulatory Staff for review and evaluation before further consideration can be given to the application for a full-power operating license.

2. Q. Why are these requirements being imposed?

A. So that we can confirm that all piping and valves are adequate for operation of the plant at full power. We have been discussing the adequacy of piping and valves,

(more)

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Rec'd Off. Dir. of Reg.
Date 7/16/67
Time 11:30

particularly those within the primary coolant pressure boundary with Jersey Central and General Electric for several months. On June 12 the company submitted amendment 53 to its application which stated the company's evaluation of piping and some of the valves. After careful consideration of that amendment and further discussions with the applicant, it was our judgment that additional non-destructive testing is necessary to assure the adequacy of the piping and valves.

3. Q. Does the same sort of situation apply to other plants?

A. We are looking further into the situation of piping and valves at other plants, but it is premature to comment at this time.

4. Q. Why has it taken so long to determine that additional testing is necessary?

A. This matter has been under discussion for some months. The amendment 53 on adequacy of piping and valves was filed on June 12 and we have been evaluating it since that time.

MEMO ROUTE SLIP
Form AWC-83 (Rev. May 14, 1947)

See me about this.
Note and return.

For concurre
For signature.

For action.
For information.

TO (Name and unit)
L. D. Low

INITIALS
[Signature]
DATE
7/12

REMARKS

TO (Name and unit)
RHE
JPO
JOK
FN

INITIALS
[Signature]
DATE
7/22

REMARKS

TO (Name and unit)
GWR
JCH

INITIALS
[Signature]
DATE
7/17

REMARKS

FROM (Name and unit)
[Signature]

REMARKS

PHONE NO.
DATE
7/16/47

USE OTHER SIDE FOR ADDITIONAL REMARKS

GPO - 10 - 70900-1

GPO : 1947 - 277-237

50-219

July 15, 1969

Harold L. Price, Director of Regulation

TELEPHONE CALL FROM JAMES LIBERMAN, COUNSEL FOR GENERAL PUBLIC UTILITIES

Jim Liberman, Counsel for General Public Utilities, called this morning to let the Commission know that GPU plans to issue a press release probably tomorrow morning concerning the delays at Oyster Creek. Mr. Liberman felt this action was necessary in order to fulfill obligations to the New York stock exchange and others. The notice will refer to the AEC's requirement for further inspection of pipes and valves prior to authorization for full power operation. The notice also will list GE's estimate of the potential delays to inspect and/or replace valves as necessary.

P. A. Morris, Director
Division of Reactor Licensing

- cc: C. K. Beck, DR
- M. H. Mann, DR
- R. L. Doan, DR
- C. L. Henderson, DR
- H. K. Shapar, OGC
- E. G. Case, RS
- L. D. Low, CO
- J. J. Fouchard, PI

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P PDR

OFFICE ▶	DRL				
SURNAME ▶	PAMorris/bh				
DATE ▶	7/16/69				

50-277

X X

S/Kenneth W. Low

USAEC
LAWRENCE D. LOW, DIRECTOR
DIVISION OF COMPLIANCE
BETHESDA, MARYLAND

JULY 14, 1969

USAEC, ROBERT W. KIRKMAN, DIVISION OF COMPLIANCE
NEWARK, NEW JERSEY

USAEC, JOHN G. DAVIS, DIVISION OF COMPLIANCE, ATLANTA, GEORGIA

USAEC, BOYCE H. GRIER, DIVISION OF COMPLIANCE, WUX, OAK BROOK, ILLINOIS

USAEC, DONALD I. WALKER, DIVISION OF COMPLIANCE, DENVER, COLORADO

USAEC, RICHARD W. SMITH, DIVISION OF COMPLIANCE, BERKELEY, CALIFORNIA

THIS IS TO CONFIRM THE TELECONS BETWEEN ROBERT H. ENGELKEN, ASSISTANT DIRECTOR FOR INSPECTION AND ENFORCEMENT, AND REGIONAL DIRECTORS OR SENIOR REACTOR INSPECTORS FROM EACH REGIONAL OFFICE ON JULY 14, 1969, CONCERNING THE RECENT COMMISSION DECISION AT Oyster Creek. THIS DECISION, WHICH INVOLVES THE APPLICATION OF NUCLEAR CODE CASE REQUIREMENTS TO PIPING AND VALVES WITHIN THE PRIMARY COOLANT BOUNDARY, SHOULD IN NO WAY BE COMMENTED UPON OR BE DISCUSSED WITH OTHER LICENSEES, MEMBERS OF THE PRESS, OR OTHER NON-AEC PERSONNEL. IN PARTICULAR, THE IMPLICATIONS OF THIS DECISION FOR OTHER REACTORS, EITHER OPERATING OR THOSE NEARING COMPLETION OF CONSTRUCTION, SHOULD NOT BE DISCUSSED WITH OTHER APPLICANTS OR THEIR REPRESENTATIVES UNLESS YOU ARE SPECIFICALLY INSTRUCTED TO DO SO.

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Engelken FILE # 008 Beth 7356 SURNAME # DATE #	CO: RI&E QTX Keppeler: oul 7-14-69	CO: ADI&E Rtc RI: Engelken 7/14/69	CO: DIR JLW 7/14			
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UNITED STATES
ATOMIC ENERGY COMMISSION
DIVISION OF COMPLIANCE, REGION IV
10395 WEST COLFAX, ROOM 200
DENVER, COLORADO 80215

July 10, 1969

James G. Keppler, Senior Reactor Inspection
Specialist, Reactor Inspection and Enforcement
Branch, Division of Compliance, Headquarters

ALLOY TUBE AND PIPE CORPORATION, HOUSTON, TEXAS

Concerning the subject and our telephone conversation yesterday, this will confirm that my notes on and recollections of Mr. W. O. Strong's statements reflect the following:

There were six or seven certified welders employed by Alloy Tube and Pipe Corporation during the time that the Oyster Creek pipe was being fabricated. These welders were not formally certified -- there was no documentation of their certification -- but they all had passed examinations by experienced welders. The two certified welders who Strong believed had done most of the welding on the pipe in question were P. Cerda and M. Sandlin. Strong stated that all of the welding had been done with the automatic welding machines, and the fact that they were certified welders was academic. Strong indicated to me that certification of welders was important only in the case of welding being done manually.

John Flora has found a reference to the requirement for a certification of welders who use automatic welding machines in paragraph Q-21(b) of Section IX of the ASME B&PV Code which states:

"... Alternatively, each welding operator who welds on vessels constructed under the rules of this Code shall be examined as follows for each welding procedure under which he does welding with machine welding equipment in which both the rate of travel and the position of the welding head with respect to the work are controlled mechanically, except for minor adjustments for such factors as plate unevenness, out-of-roundness and lead-angle."

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John J. Ward
John J. Ward
Investigation Specialist

cc: J. W. Flora, CO:IV

9 3137

July 1, 1969

Peter A. Morris, Director
Division of Reactor Licensing

OYSTER CREEK ULTRASONIC INSPECTIONS

The enclosed report covering the results of ultrasonic inspections of Oyster Creek piping in March 1968 is forwarded for information. Amendment No. 53 (Page 22) references this report to support GE's position. This report has not changed our position that little credit should be given to this work to support the acceptability of the ATAFCO piping.

Original signed by
R. H. Engelken

R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

Enclosure:
As stated

cc w/enclosure:
C. L. K. Beck, DR
R. L. Doan, DFL
M. M. Marn, DR
K. G. Case, DRB
R. S. Boyd, DFL
S. Levine, DFL
R. C. DeYoung, DFL
R. L. Tedesco, DFL
A. W. Dromerick, DFL
J. P. O'Reilly, CO

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SURNAME ▶	GWReinmuth:kbp	FJNolan	JGKepler	JPO'Reilly	RHEngelken
DATE ▶	7/1/69	7/2/69	7/2/69	7/2/69	7/2/69



UNITED STATES
ATOMIC ENERGY COMMISSION

WASHINGTON, D.C. 20545

L.D. Low
50214

JUN 26 1969

NOTE TO H. L. PRICE

OYSTER CREEK

As agreed with you and Dr. Beck, I called John Barnard (I also talked to Jim Graham) on Wednesday night, June 25, to describe our current thinking with respect to requirements we believe should be fulfilled at Oyster Creek before the plant is brought to power operation. I pointed out that our position had not changed appreciably since we had talked to Jersey Central and G.E. some 3-1/2 weeks ago, but that we did not yet have a final, official position. The purpose of my call was to notify the companies as soon as possible of progress in development of the Commission position.

I said that for suspect pipe (atapco), fittings and valves in critical systems, we were not satisfied with the amount of radiography that had been done and still feel that that work defined by the nuclear code cases should be done.

Within the reactor coolant pressure boundary, up to the second isolation valve (for example, our thinking is that 100% radiography of accessible welds is desired for all pipe, fittings and valves larger than a minimum size in all critical systems. I said we could spell this out in some detail immediately.

For systems outside the reactor coolant pressure boundary, we would require additional work, but could not yet define this in detail. I indicated we thought we could define our information requirements on these systems by the close of business on Friday (6/27) and that we would suggest a meeting the week of 6/30 to receive detailed and complete information from G.E. if G.E. were ready. Based on this information and reports from the Division of Compliance on their current inspection activities, we would develop our final requirements.

John expressed the opinion that G.E. would do no further work unless the company were sure of the scope necessary to satisfy the Commission finally, and perhaps they would elect to try to convince the

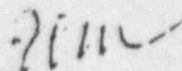
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Commission that no work was required. In any event, he foresaw weeks of delay.

We both acknowledged that what was required at Oyster Creek could affect what would be required at other G.E. turnkey plants.



Peter A. Morris

cc: C. K. Beck
K. L. Doan
M. M. Mann
E. G. Case
L. D. Low
F. Schroeder
K. S. Boyd
S. Levine
D. J. Skovholt

10-211

WR

TO: J. P. O'Reilly
FROM: G. W. Reirmuth
SUBJECT: TELEPHONE CALL FROM ALSAGER - RE: OYSTER CREEK

L. Alsager called (1:00PM) me to indicate Shaw is having their field representatives investigate the piping situation at the PBF rather than Booth and Alsager. I do not know why he thought we had an interest in this report.

He was interested in what course our program would take with regard to Oyster Creek. I indicated it was still under discussion at upper Regulatory levels and that no communication had been made with the licensee at this time. I indicated our tentative program probably would include 100% RT, more PT, complete documentation, and metallurgical sampling but not completely through the pipe. He expressed the opinion that this sounded like a solid program and was justified.

PHI 10/22
then to file and
AK
3/22

Don't sign

JUN 20 1969

Peter A. Morris, Director, Division of Reactor Licensing

JERSEY CENTRAL POWER AND LIGHT COMPANY (OYSTER CREEK) - DOCKET NO. 50-219

The enclosed final report of our investigation into allegations made relating to certain piping, fittings, and valves at the subject facility is forwarded for information. This report supplements the information provided in the two interim reports transmitted to you in my memoranda dated May 2 and 12, 1969. Additional comments and recommendations relating to this problem will be transmitted separately.

Original signed by
R. H. Engelken,
R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

Enclosure:
Special Investigation Report
dated 6/9/69

Low...

cc w/encl:
M. M. Mann, DR
E. G. Case, DRS
R. S. Boyd, DFL (2)
D. J. Skovholt, DFL
S. Levine, DFL (2)
L. Kornblith, Jr., CO
CO:II, III, IV and V
REG Central File

CO:I w/o encl

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PDR ADDCK 05000219
P PDR

OFFICE	CO JKeppler	CO RHEngelken			
SURNAME	JPO'Reilly	RHEngelken			
DATE	6/20/69	6/20/69			

50-219



UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

June 19, 1969

The Files

NOTIFICATION OF JCAE CONCERNING DEVELOPMENTS IN OYSTER CREEK PIPING PROBLEM

During a discussion this morning with Mr. Harold L. Price and his principal staff on the developments in the Oyster Creek piping problem, Mr. Low reminded Mr. Price that we had not updated the JCAE staff on this matter for quite some time. Mr. Price at first expressed surprise that we had failed to do so but was reminded that Low and I on at least two or three occasions during the past couple of months had urged him to inform the JCAE and that for one reason or another, he had declined to do so. Mr. Price then called Captain Bauser and gave him a capsule version of the current status of the problem. In brief the following is the substance of Mr. Price's conversation with Bauser.

Our investigation of the piping allegations revealed that GE had not applied certain requirements (e.g., radiography and dye penetrant testing) to certain pipes and valves in critical systems of the Oyster Creek reactor. As a result of our investigation, GE had done a considerable amount of radiography and testing but that in all probability we would be requiring them to do more. He emphasized that a final decision on this matter had not been made as yet and that we were still reviewing Amendment 53 which describes the extent of the GE effort to establish the quality of their piping. Mr. Price also pointed out that this could develop into a pretty big problem and that the JCAE might very well be hearing from GE on this matter in the near future since Jersey Central will be ready to begin higher power operation this coming weekend (June 22, 1969).

R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

cc: L. D. Low, CO
J. P. O'Reilly, CO

HHE:cj

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50-219

June 18, 1969

M. M. Mann, Assistant Director of Regulation for Reactors

THE APPLICABILITY OF NUCLEAR CODE CASES - OYSTER CREEK REACTOR

As discussed with you this afternoon, please find enclosed a copy of an excerpt from the General Electric Functional Specification and Design Criteria for the Oyster Creek Nuclear Power plant. Contrary to current exhortations by representatives of the General Electric Company, this document makes it quite clear that GE considered the B31.1 Nuclear Code Cases applicable to the Oyster Creek project as of July 13, 1964, when the GE design criteria were issued.

This enclosure is included as Exhibit C in our formal investigation report of the Oyster Creek piping investigation. The report is currently under review and will be distributed shortly.

Original signed by
R. H. Engelken

R. H. Engelken, Assistant Director
for Inspection and Enforcement
Division of Compliance

Enclosure:

Excerpt from: GE Atomic Power Equipment
Dept.'s Functional Specification and
Design Criteria for Jersey Central Oyster
Creek Nuclear Power Plant, dated 7/13/64

cc w/encl:

- C. K. Beck, DR
- P. A. Morris, DFL
- E. G. Case, DRS
- L. D. Lov, CO
- R. S. Boyd, DFL
- S. Levine, DFL

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OFFICE ▶	CO <i>Reilly</i>	CO <i>Engelken</i>			
SURNAME ▶	JPO'Reilly:ej	RHEngelken			
DATE ▶	6/18/69	6/18/69			

FUNCTIONAL SPECIFICATION AND DESIGN CRITERIA

FOR

JERSEY CENTRAL

OYSTER CREEK NUCLEAR POWER PLANT

Author: GE LLOYD

Date: July 13, 1964

Revisions:

3

GENERAL ELECTRIC COMPANY

ATOMIC POWER EQUIPMENT DEPARTMENT

EXHIBIT C (1 of 3 pages)

FUNCTIONAL SPECIFICATION AND DESIGN CRITERIA

FOR

PIPING AND VALVES

1.0 SCOPE

1.1 Purpose

This criteria establishes specific requirements for any piping system connected to the reactor pressure vessel and for all piping systems which will or may become contaminated by radioactive fluids.

1.2 Extent

Systems covered by this criteria are listed below:

- 1.2.1 Control Rod Drive Hydraulic System
- 1.2.2 Reactor Water Recirculating System
- 1.2.3 Reactor Cleanup System
- 1.2.4 Emergency Condenser System
- 1.2.5 Reactor Shutdown System
- 1.2.6 Core Spray System
- 1.2.7 Post Incident Cooling System
- 1.2.8 Liquid Poison System
- sv piping → 1.2.9 Main Steam System —
- 1.2.10 Condensate System
- 1.2.11 Condensate Demineralizer System
- 1.2.12 Extraction and Heater Drain Systems
- 1.2.13 Feedwater System
- 1.2.14 Condensate Surge System
- 1.2.15 Refueling Tank Water Storage System
- 1.2.16 Fuel Pool Cooling and Filtering System
- 1.2.17 Reactor Building Closed Cooling System
- 1.2.18 Drywell and Suppression Pool Vent Systems
- 1.2.19 Condenser Off-Gas System
- 1.2.20 Instrumentation and Control
- 1.2.21 Turbine Building Closed Cooling Water System
- 1.2.22 Radioactive Waste Disposal System
- 1.2.23 Resin Transfer System
- 1.2.24 Steam to Air Ejectors
- 1.2.25 Turbine Gland Steam and Drains
- 1.2.26 By-Pass Steam System
- 1.2.27 Reheater Supply Systems

ASA B16.11 "Steel Socket Weld Fittings"
B36.10 "Wrought steel & wrought iron"
B36.19 "Stainless steel pipe"

2.0 CODE REQUIREMENTS

2.1 ASA Code

With the exception of the piping specifically defined in Paragraph 2.2 below, all piping, valves and fittings shall be designed, fabricated, erected, supported and tested in accordance with Sections 1 and 6, ASA B31.1, B16.11, B36.10 and B36.19, Codes for Pressure Piping together with the latest supplements, addenda and applicable nuclear code cases.

RE: PIPING, VALVES AND FITTING INVESTIGATION
AT OYSTER CREEK

Please find enclosed an advance copy of
the investigation report. If you have any
comments or suggestions, please let me know
at your earliest opportunity. Thanks.

J. W. Florn, CO:IV

X

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Original signed by

64 J. P. O'Reilly

OFFICE	CO			
SIGNATURE	J. P. O'Reilly: KDP	J. P. O'Reilly, CO:HQ	6/12/69	
DATE	6/12/69			

50-219

RE: JERSEY CENTRAL POWER AND LIGHT COMPANY -
OYSTER CREEK UNIT 1

Enclosed for your information is a copy of a
DRL memorandum dated June 11, 1969 concerning
DRL comments on leak rate testing of the main
steam isolation valves.

Enclosure:
Memo dtd June 11, 1969 *sub sent*

bcc: F. J. Nolan, w/encl

R. T. Carlson, CO:I X

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Original signed by
J. P. O'Reilly

OFFICE	CO. 7M			
SURNAME	FJNolan:clm	J. P. O'Reilly		6/13/69
DATE	6/13/69	6/13/69		

June 11, 1969

Harold L. Price, Director of Regulation

CODES AND STANDARDS PROBLEMS AT THE JERSEY CENTRAL POWER AND LIGHT COMPANY REACTOR FACILITY (AND OTHER REACTOR FACILITIES)

It is apparent that a major confrontation is developing between the General Electric Company (GE) and the AEC (Regulatory) on certain problems that exist at the Oyster Creek facility. This confrontation, according to a GE representative (Mr. John Barnard) is necessitated by the costs and delays which would result from repairs and investigations that the Regulatory staff has suggested to GE and which we consider necessary to prove the quality of uncertified piping, fittings and valves already installed in the Oyster Creek reactor. According to Barnard, the major problem relates to the application of the AEC suggestions to other GE plants already in advanced stages of construction.

The major issue, the only one discussed in this memorandum, is the question of the applicability of Nuclear Code Cases to the Code for Pressure Piping (B 31.1). You will recall that the application of Nuclear Code Case requirements to critical valves was one of the essential ingredients of the certification criteria for suspect piping and valves in the Oyster Creek plant which were developed by Compliance with assistance from the Divisions of Reactor Licensing and Reactor Standards. As you know, before being informally presented to GE and Jersey Central, these criteria were reviewed by Milt Shaw's staff and incorporate their suggestions. Regulatory's position is that an applicant who states that he will conform to the Code for Pressure Piping must meet the requirements of the Nuclear Code Cases applicable to this Code. These requirements, which are well known to nuclear designers, are considered to be minimal standards for assuring acceptable quality of piping in nuclear systems. General Electric contends that Nuclear Code Cases to the Code for Pressure Piping are not legal requirements and, therefore, are not mandatory. They state that they informally polled a significant number of Code committee members and that these members agree with their contention.

It is Compliance's position that the failure of applicants to conduct the tests and examinations specified in the Nuclear Code Cases would result in a significant loss of assurance that valves in important piping systems had been fabricated to acceptable standards of quality. If acceptable quality were not achieved in these valves, the pressure of these piping systems might be compared to a chain made from a collection of both strong and weak links. In addition to resulting in a significant decrease in plant quality, failure to invoke the Code Cases would significantly impair

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SUBJECT

DATE

Harold L. Price

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June 11, 1969

various Regulatory Divisions in their understanding and interpretation of submitted applications and in the enforcement of existing codes. If these cases cannot be enforced, the "requirements" of other codes are truly questionable.

For further information, I have attached two enclosures. Enclosure 1 provides excerpts from Nuclear Code Cases, the High Pressure Piping Code, and a quotation from a BWR application. Enclosure 2 provides examples of cases currently being handled by Compliance and which relate directly to Nuclear Code Cases.

I would like to discuss this problem with you at your earliest convenience.

Original signed by
L. D. Low

Lawrence D. Low, Director
Division of Compliance

Enclosures:

1. Excerpts
2. Case Examples

CC w/encls:

M. M. Mann, DR
C. K. Beck, DR
H. K. Shepar, GC
P. A. Morris, DRL
E. G. Case, DRS

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SURNAME ▶	JPO Reilly:ej	LOW				
DATE ▶	RH Engelken	6/11/69				

Enclosure 1

EXCERPTS FROM NUCLEAR CODE CASES; CODE FOR PRESSURE PIPING;
AND QUOTATION FROM A BWR APPLICATION

A. NUCLEAR CODE CASES

Although out of context and devoid of technical detail, the following excerpts from the Nuclear Code Cases of the Code for Pressure Piping are provided as a reference to judge the implications and intent of the language of the Code. Underscoring has been added to language of particular interest.

"Case N-1 (Reopened) General Requirements for Nuclear Power Plant

Inquiry: Under what sections of the ASA Code for Pressure Piping should piping in nuclear power plants be designed and constructed? What special requirements must be met?
.....

Reply: It is the opinion of the Committee:
.....
..... 3. That specific exclusions and special requirements will be covered in nuclear cases as they are developed. These will be issued and numbered with the prefix 'N'."

"Case N-2 Requirements for Valves in Nuclear Piping Systems

Inquiry: What are the requirements for valves used under the rules of ASA B 31.1 in nuclear piping systems?

Reply: It is the opinion of the committee that valves used in nuclear piping systems must meet the following requirements
....."

"Case N-10 Cast Austenitic Butt Welding Fittings for Nuclear Service

Inquiry: Under what conditions may cast austenitic steel butt welding fittings be used within the scope of Section 1 of the Code for Pressure Piping for nuclear service?

Reply: It is the opinion of the Committee that ASTM Specification A-351 and ASA B 16.9 are not sufficiently definitive for acceptance for Nuclear service as currently written. It is the opinion of the

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Committee that the intent of the Code will be satisfied provided the following conditions are met:
 (establishes requirements for surface inspection, fluid penetrant and for radiography)
"

B. B 31.1.0 CODE FOR PRESSURE PIPING

"Introduction. The Code for Pressure Piping sets forth engineering requirements deemed necessary for safe design and construction of piping systems."

"Scope. This Code prescribes minimum requirements for design materials fabrication, erection, testing and inspection of power piping systems for steam, electric generating stations; industrial plants;
"

C. QUOTATION FROM A BWR APPLICATION

In Commonwealth Edison's application dated August 19, 1965, it is stated that the primary piping and valves as well as primary steam and auxiliary piping "will be designed, built and constructed to meet, as a minimum, the requirements of ASA-B 31.1 Code for Pressure Piping and any applicable State regulations."

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Enclosure 2

NUCLEAR CODE CASES CURRENTLY BEING HANDLED
BY THE DIVISION OF COMPLIANCE

A. CONNECTICUT LIGHT AND POWER COMPANY (MILLSTONE) VALVE PROBLEMS

During a visual inspection of the recirculation system by a Compliance inspector, a machined flange of a 28-inch valve bonnet was observed to have surface defects. Liquid penetrant tests of the observed areas, conducted at the request of Compliance, disclosed macroshrinkage, inclusions and numerous linear indications. The indications extended across the flange thickness and at some locations, across the flange face for measured distances up to one inch. These indications are rejectable according to recognized dye penetrant acceptance standards (ASME Section III, N-627.3 or ASA B 31.1.0, Code Case N-10). Radiography was performed on the valve but because of poor technique, the defects were not detected. We do not consider that the GE radiography requirements were met (ASME Section III, N-624).

The valve in question is one of two similar valves located below the reactor core. Catastrophic failure would result in the maximum credible accident. Upon identification of the problem by Compliance on the first valve, GE refused to conduct dye penetrant testing of the other recirculation valve. They stated that they met Code requirements.

While the GE purchase requirements specified radiography, no supporting test procedures such as dye penetrant testing were imposed. Imposition of the ABA Piping Code, Nuclear Code Case N-10, would have clearly identified and resolved the observed condition prior to delivery or installation. It must be noted that the only requirement for radiography and dye penetrant testing of this vital component is contained in the Nuclear Code Cases. No other requirement exists unless the purchaser invokes it.

Reference: Special Compliance Report dated 6/3/69

B. JERSEY CENTRAL POWER AND LIGHT COMPANY ANCHOR VALVE PROBLEM

Cracks were visually detected by Compliance on an installed core spray system stainless steel isolation valve. The valve was procured from the Anchor Equipment Company. Investigations by GE showed the defects, later identified as fabrication defects, to be sufficiently serious that a decision was made by GE to replace the valve rather than attempt

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repairs. Subsequent examination of other Anchor-supplied stainless steel valves resulted in the replacement, or major repairs, to five of 21 valves which serve as isolation valves for the primary system. The applicant's purchase specifications for these valves required 100 percent radiography and dye penetrant examination. Compliance findings indicate that the radiography was not properly reviewed. In addition, the types and numbers of defects visually observed raise serious doubts as to whether the liquid penetrant examinations were performed. Nuclear Code Cases N-2 and N-10 require radiography and liquid penetrant examinations to specific acceptance standards.

References: Compliance Reports Nos. 219/68-10; -1 and -2

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D. J. Skovholt, Assistant Director
for Reactor Operations
Division of Reactor Licensing (3)

JERSEY CENTRAL POWER AND LIGHT COMPANY (OYSTER CREEK)
DOCKET NO. 50-219

The enclosed report of a special inspection to investigate allegations made by Alan H. Galer, a radio station news director, Asbury Park, New Jersey, in connection with the subject facility is forwarded for information. These allegations were brought to the attention of Mr. L. D. Low by the Honorable William T. Cahill, Representative, Sixth Congressional District, New Jersey.

Our investigative efforts failed to develop new information of safety significance at Oyster Creek or any information of regulatory interest not previously known to the regulatory staff. This matter is considered to be closed.

Original signed by
J. P. O'Reilly

J. P. O'Reilly, Chief
Reactor Inspection and
Enforcement Branch
Division of Compliance

Enclosure:
Investigation Report

cc w/enclosure:
E. G. Case, DBS
R. S. Boyd, DRL (2)
S. Levine, DRL (6)
L. Kornblith, Jr., CO
R. T. Carlson, CO: I w/o encl
REG Central File

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SURNAME ▶	JGKeppler:mlc	JPO Reilly			
DATE ▶	11/3/69	11/3/69			

REASON FOR INVESTIGATION

On July 29, 1969 the Honorable William T. Cahill, Representative, Sixth Congressional District, New Jersey informed the Director, Division of Compliance, by telephone that he had received a telephone call from representatives of the Asbury Park Press, Asbury Park, New Jersey indicating they had definite evidence that a serious condition in the nature of leaking pipes existed at Oyster Creek Unit #1 (OC-1), that increased construction costs had been covered up and that racketeering was prevalent. In a telephone conversation the same date with Alan H. Galer, Radio News Director for Radio Station WJLK, Asbury Park (Cahill's informant), Low was informed that the questioned piping at the site had been examined by General Electric Company (GE) inspector who had confirmed that it was of inferior quality and then he was transferred.

Low directed CO:1 to conduct an investigation into the information presented by Galer, concentrating primarily on allegations with safety significance.

SUMMARY OF FACTS

The only information developed relating to allegations with any safety significance was that the two witnesses, William Major and James Smith, identified as being the principal sources of the allegations, disclosed that they had first-hand knowledge only of the installation of rolled and welded stainless steel pipe in the emergency condenser system which, in their opinion, was less satisfactory than seamless stainless steel pipe. Both witnesses confirmed that all welds had been radiographed and that all defects had been cut out and rewelded satisfactorily. The condition of the piping in the emergency condenser system is a matter of which the Regulatory had prior cognizance (ATAPCO pipe case) and has seen to a satisfactory resolution.

With regard to the matter of a GE inspector finding that certain piping at the facility was of inferior quality and then being transferred or fired (presumably for disclosure of this observation), it was determined that the identified source of this information (James Smith) was aware of the transfer of a GE welding inspector (Charles Smith) to a new job, but no specific reason was given for the transfer.

The allegations relating to matters other than those with any safety significance were not pursued as being outside the jurisdiction of the Regulatory.

Persons Interviewed

James Brown, Assistant Editor and Feature Writer, Asbury Park Press

Lawrence Crowley, Reporter, Asbury Park Press

Alan H. Galer, Radio News Director, Radio Station WJLK, Asbury Park, New Jersey

John Ladwig, Reporter, Asbury Park Press

Daniel Lass, Assistant Managing Editor, Asbury Park Press

William Major, Boilermaker-Welder, Toms River, New Jersey

James Smith, Steamfitter-Welder, Point Pleasant, New Jersey

Exhibits

A - Summary dated July 30, 1969 of news reports and general allegations prepared by James Brown, Asbury Park Press.

DETAILS

Introduction

1. On July 29, 1969 L. D. Low, Director, Division of Compliance, was informed in a telephone conversation with Honorable William T. Cahill, Representative of the Sixth Congressional District, New Jersey, that one of the leading newspapers in the state of New Jersey had telephoned to him that they had definite evidence that a really serious condition in the nature of leaking pipes existed at the OC-1 plant being constructed in Lacey Township, New Jersey. According to Cahill they seemed to be firm in their statements that they could support this information. The newspaper was ready to publish a story which Cahill thought they should check before publishing. Cahill also indicated some other matters outside the jurisdiction of this agency such as covering up costs and racketeering. Cahill also stated the licensee, JCPL, had recently announced it was going to request an increase in rates. Cahill identified the newspaper representative as an individual named Galer and that he would have Galer call Low.
2. Mr. Low reported this telephone call to the Director of Regulation who requested that Galer be interviewed.
3. Galer telephoned to Low on July 29, 1969 and identified himself as the Radio News Director for Radio Station WJLK, which is owned by the Asbury Park Press. Galer informed Low that about a year ago a foreman asked for inspection of pipes, that the pipes were of inferior quality, that the inspector confirmed that they were of inferior quality and then was subsequently transferred. Galer asked if the subject pipes were replaced and why they were there in the first place. Galer stated in response to questioning by Low that the inspector he was talking about was employed by GE. Further, that he had the names of two men who could confirm this story. Low informed Galer he would have a representative of this agency communicate with Galer to arrange for an interview.
4. On the evening of July 29, 1969, Alvin F. Ryan, Investigation Specialist, CO:1 at the request of the Director, Division of Compliance communicated by telephone with Galer and arranged to interview Galer at the office of the Asbury Park Press on July 30, 1969. Galer again repeated essentially the telephone conversation he had had earlier with Low.

Background Information

5. In February 1969 allegations were made that certain piping, fittings and valves installed at OC-1 were in violation of the specifications and codes of the American Society for Testing Materials, the American Society of Mechanical Engineers and/or the architect-engineer. The results of the CO investigation into these allegations are documented in the CO Investigation Report dated June 9, 1969. Of particular interest to this current case are the findings regarding the earlier allegations relating to piping. Specifically that certain piping installed in the facility did not in fact conform to the required standards of ASTM A-312 (seamless or welded without filler metal) or ASTM A-376 (seamless), the choice of materials specified by the A-E. Included in the subject piping was that employed in the emergency condenser system. As a result of this finding, the licensee and his contractors were required to demonstrate to the satisfaction of the Regulatory the serviceability of the subject equipment prior to the issuance of the full power operating license. This was accomplished and is well documented in this docket file.
6. During the field hydrostatic test run on the reactor pressure vessel, conducted in September, 1967, a leak was detected emanating from one of the control rod drive penetrations. Subsequent investigation revealed the source to be a faulty field weld joining the stub tube to the subject control rod drive housing. Additionally, cracks were detected in the surfaces of most stub tubes. These problems were also the subject of extensive review by the Regulatory. Corrective measures taken included cladding all the stub tubes and replacement of the stub tube to housing field welds. These matters are also well documented in this docket file.

Interviews

Alan H. Galer

7. On July 30, 1969 Galer was interviewed by Ryan at the office of the Asbury Park Press, Mattison Avenue, Asbury Park, New Jersey. Also present at the interview were the following employees of Asbury Park Press: Daniel Lass, Assistant Managing Editor, James Brown, Assistant Editor and Feature Writer, John Ladwig, Reporter and Lawrence Crowley, Reporter.
8. Galer identified himself to Ryan as the Radio News Director of Station WJLK, owned and operated by the Asbury Park Press. Galer stated that Brown was doing a series of articles on the reactor at Oyster Creek. Galer then requested Brown to cover the background of the newspaper's interest in this problem. Brown presented a document dated July 30, 1969 which he identified as a summary he had prepared to which were attached copies of news articles previously published by the Asbury Park Press in the period from February 20, 1965 to July 18, 1969. A copy of this summary and the accompanying news articles is attached hereto as Exhibit A. The summary and the supporting documents cite as sources for the information published, Nucleonics Week and officials of GE and JCPL. The summary states that JCPL is presently seeking a 13% rate increase but denies that the increased costs of OC-1 are related to the increase. The summary also reports widespread rumors of thefts of material from the plant, that a company organized by the Lacey Township Police Chief obtained a subcontract from GE, that the Police Chief had made statements that he had received gifts worth thousands of dollars from contractors at the plant, including scrap materials, and that the theft of materials and strikes in the period between February, 1965 and January, 1968 had added to the cost of the project. Brown, at Galer's request, stated that an inspector who had checked the plant discovered defective piping. He reported it as defective and subsequently was either transferred or fired from his job. Neither Galer nor Brown could identify the inspector. They stated their information came from two individuals, one, William Major who resides at 536 Skylark Drive, Toms River, New Jersey, telephone number 201-349-7591. According to Brown and Galer, Major was present when the piping was inspected by x-ray and he reportedly heard the examiner state the material was inferior. The other man was identified as James Smith, a foreman on the job identified as a member of the steamfitters union in Neptune, New Jersey (subsequently identified by Ryan as the Plumbers and Pipefitters Union of America Local 331 located at 122 Drummond Avenue, Neptune, New Jersey). According to Galer and Brown, Smith was reportedly the foreman who had requested inspection of the piping, and the disclosure of the results indicating inferior piping had been installed probably resulted in the transfer or dismissal of the inspector.
9. Lass, Brown and Galer had unverified, undocumented information concerning Police Chief Patrick J. Geraghty of Lacey Township, New Jersey. They stated they had obtained this information from Leslie Byrd, former business executive for the Carpenters Union local at Perth Amboy, New Jersey. This information included the following statements: "Geraghty got a secretarial job at the plant for a woman. He got a painting job at the plant for a man. Security personnel could not be employed unless approved by Geraghty." According to Lass, Brown and Galer, Geraghty is reportedly a member of Local 825 of the Operating Engineers Union. He is described as a friend of Pete Weber, Vice President of the Operating Engineers Union who, according to Galer, was recently convicted of extortion. Galer, Crowley, Brown and Lass stated that Geraghty is an associate of known Mafia figures including John DeCilio, John Ives and Carlo Zinata. Geraghty reportedly made a trip to Bermuda with Charles Brudner, identified by Galer as the Mafia boss of Nassau, B. W. I. Geraghty was supposed to be with a person named Celso and another named Bombachi. Galer and his associates had no specific details available other than Celso is the individual whose property in Jackson Township, New Jersey, was dug up recently by the FBI in a search for the bodies of murdered persons.
10. According to Brown, John Parker, committeeman in Lacey Township, is a partner with Geraghty in the K-C Constructors Inc. Brown stated he had heard, but only as a rumor, that K-C Constructors Inc. was a front for Pete Weber. In 1967, according to Brown, Parker's home was raided by the New Jersey State Police. At that time Carlo Zinata was present at Parker's home. Brown stated that there were allegations that Zinata had been arrested for conducting a bookmaking operation at the OC-1 site.

11. According to Brown, concrete supplied to the site was delivered with a levy of \$1.00 to \$2.00 per cubic yard, making for a total kickback of \$100,000. Brown acknowledged that all of the information he had was based on rumor and hearsay. He stated that this information had been obtained from various law enforcement sources. Brown declined to identify these sources specifically and further acknowledged that he could not verify that his informants had first hand knowledge of the facts.
12. Lass stated that he was concerned that JCPL is planning to file an application for an increase in rates. According to Lass, the initial announcement by JCPL stated the increase would be about 2%. However, within the last few days Lass stated he learned the increase would be 1%.
13. Lass stated that in the course of constructing the reactor in Lacey Township there have been ten strikes of various duration, the settlement of which undoubtedly increased the cost of the plant. The alleged thefts of material from the site and the alleged kickbacks have, according to Lass, added to the cost and it is his opinion that the application for an increase in rates was necessitated by the increased cost of construction of the reactor.
14. Galer and his associates were interested in the responsibility AEC had in connection with the construction of the reactor. Ryan informed them that AEC is the agency which, on the basis of an application submitted and satisfactorily reviewed, would authorize construction of the reactor to be constructed in accordance with AEC regulations and with applicable codes and specifications. They were also informed that AEC inspectors were assigned to check on conformance of the construction to these requirements. Brown and Lass were interested in any enforcement exercised by this agency with construction standards particularly with regard to the piping. Ryan explained that the standards of ASME and ASTM were usually prescribed by the architect engineer as the standards to be followed but that the enforcement authority exercised by these two organizations was not known.
15. Galer and Lass wanted to know what action would be taken in connection with the information provided at the interview. It was explained to them that much of the information given concerned matters outside the jurisdiction of this agency and were probably within the jurisdiction of the local or state police or possibly of the FBI. They were informed that the results of the interview would be reported to CO:HQ before further action would be taken.

William Major

16. On July 31, 1969 William Major was interviewed at his home 536 Skylark Drive, Toms River, New Jersey. He is the father of William Major who is head of the Major Construction Co. identified as the individual who had information concerning inferior piping installed at OC-1. On July 30, 1969 when a telephone call was made by Ryan to arrange an appointment with William Major, he learned that there were two individuals by the same name, the head of the Major Construction Company, a contracting firm, engaged in excavating work for residential buildings in the Toms River area and William Major, his father, who is a boilermaker by trade and who had been employed in the construction of OC-1. William Major, head of Major Construction Company was not interviewed because he had not been employed at OC-1 at any time and any information he might have would be hearsay.
17. On July 31, 1969 William Major informed Ryan and R. T. Carlson, Sr. Reactor Inspector, CO:I that he had been employed at OC-1 from June 1966 to November 1968. From June, 1966 to September 1966 he had been employed by All-Steel, assembling the main condensers, i.e. putting the shells together and welding them. From September 1966 to June 1967 he worked as a boilermaker for the Worthington Pump Corporation, still assembling the condensers. In June 1967 he started with Almirell-Doyle in the reactor building repairing defective welds that had been found by x-ray. He stated he had worked on electrical and piping penetrations, including those for the emergency condenser system. He stated that the welding team went as far as the first joint of the reactor containment. Major stated that the steamfitters took this over from them. Major stated that he worked only on carbon steel piping not on stainless steel piping. He stated that he had found laminations in welds that had been done. He stated he had to repair the welds by cutting back the laminations

- and then doing a good weld. He stated he also found evidence of chill rings in the welds that had been done at the factory. Major stated he would be given the radiographic or x-ray films showing the defects and he would then make the required repairs.
18. Major stated that the radiography inspectors were very strict. He stated that the radiography films would also be inspected by GE representatives.
 19. Major stated that he saw stainless steel piping installed in the emergency condenser system that was rolled and welded pipe. He stated that from the markings on the pipe, it had been furnished by Tubeco. Major stated that he believed seamless stainless steel pipe should have been used. He stated that two pieces of rolled and welded pipe never butt properly for a good fitup and it is necessary to build up or grind down to get a good weld.
 20. When he was questioned about the reported incident of the transfer of an inspector Major said that there was an inspector of welding, a Polish fellow named Mike (whose last name he did not recall), who was employed by Burns & Roe, and who was let go in the latter part of 1967 or early 1968. Major stated that he did not know why Mike was let go and he did not know of any other inspector who was let go.
 21. Major stated that all through the job there were comments by fitters that the pipe was bad, that they could not do a good job of joining the pipe. Major stated that the men would complain to Charles Smith, a GE supervisor. Smith explained to Major that he could do nothing about it.
 22. Major stated that Almirall-Doyle finished up its work in July or August 1968 and he then went with J. A. Jones as a boilermaker until November, 1968 when he left the site. He stated in the period from August to November, 1968 he worked on the reactor pressure vessel stub tubes doing cladding and welding the control rod drive housings to the stub tubes when the former were reinstated.
 23. Major was asked whether any information reflecting on the quality of construction at OC-1 had appeared in local newspapers and whether he, because of his employment at the site, may have been interviewed by newspaper people. Major stated that he recalled seeing some news articles in local newspapers but these were related primarily to explanation for the delay in completing the project. Major stated that he had not been interviewed by any newspaper representatives at any time. When he was asked if his son may have had some information concerning the site, Major stated that his son, William Major, had never been employed at the site and he did not know how he could obtain any information other than that which the elder William Major may have discussed.

James Smith

24. James Smith was interviewed July 31, 1969 at his home 1416 Juniper Drive, Point Pleasant, New Jersey. He was located by Ryan through inquiry at the Plumbers and Pipefitters Union of America Local 331 which had been incorrectly identified as the Steamfitters Union.
25. Smith informed Ryan and R. T. Carlson, Sr. Reactor Inspector CO:1, that he had been employed at OC-1 by Almirall-Doyle from December 1966 to January 1967 as a welder. He then took an extended vacation until March 12, 1967 at which time he returned to work for Almirall-Doyle as a pipefitter and continued until December 17, 1967. Then starting in January 1968 he worked for the Honeywell Instrument Corporation until June 1, 1968.
26. Smith stated that during the time he was employed by Almirall-Doyle he was a foreman of steamfitters. He stated that in the emergency condenser system he had observed stainless steel rolled and welded pipe. He said that some of this pipe was egg shaped. The butt ends had to be built up or ground down in order to fit. He stated that since the system was an "emergency" system, he believed the pipe should have been seamless because the longitudinal welds might have a flaw.

27. Smith stated he knew of no transfer of any inspector from the job. He stated there was a Charles Smith, a welding inspector for GE, who transferred to Connecticut to a new job.
28. James Smith stated that he did not know of any "leaking pipes" in the installation. He stated that he assisted in the hydrostatic testing of the piping. He stated that he handled the valves putting in water or shutting off the valve as ordered. He stated that he did not know the results of the hydrostatic tests.
29. Smith cited an instance where he had observed some welding that had been done at the fabricators which had to be reworked at the site. He stated that he had a man spend four hours cleaning out the inside of a saddle tee that had come from Tubeco. The weld had parts of electrodes in it.
30. Smith stated that x-rays or radiography of all welds were routinely done to determine that they were satisfactory and that those that did not pass inspection were repaired by the welder and again radiographed. He stated that it was the practice to have the fitter who did the welding make the repairs if the weld was defective.
31. Smith, in answer to questions, stated that at the time cracks were found in the stub tubes they were repaired. He stated that a local newspaper, the Asbury Park Press, had blamed the steamfitters for this. However, Smith stated the work had not been done by steamfitters, but by boilermakers. He stated that he does not know anyone from the Asbury Park Press and that he had not been interviewed by anyone from any newspaper. Smith stated that when he was first hired he was told that the plant was extremely important and because of this he could not understand why seamless pipe was not used instead of rolled welded pipe.

Nuclear Power Due In Late Summer

6186 1LB 4 1968

By MYRNA GRAY
Press Staff Writer
ACEY TOWNSHIP — The
nuclear reactor at Oyster
Creek is now expected to be
producing electricity for Jer-
sey Central Power and Light
Co. (JCP&L) in about six
months. The plant is 90 per
cent complete, according to
construction officials.

If the remaining 4 per cent
— including work which be-
gan Monday to repair flaws
in the welding — is finished
without further obstacles, the
generating station will be op-
erating 12 months behind the
schedule specified in the con-
tract with General Electric.

Meanwhile, the utility plans
to build a second and larger
nuclear reactor within the same
site, and a third nuclear
plant may be constructed on
a 136-acre tract in Union
Beach, possibly by 1974.

Work on the current \$78
million plant was started in
October 1964.

"It was supposed to have
been finished last May . . .
Now there is no projected
date for completion or take-
over," says JCP&L President
William H. McElwain.

A SPOKESMAN for General
Electric attributes the delay
primarily to repair work.
"But the labor situation
hasn't helped us any," he
said. He was referring to fre-
quent jurisdictional disputes
among the many unions rep-
resenting workers on the job,
the latest occurring on Jan.
24 and lasting three days.
There have been 25 subcon-
tracting firms on the job.

Four years of construction
he adds, particularly since the
Oyster Creek reactor is twice
as large as any existing boil-
ing water reactor.

It is New Jersey's first nu-
clear station and is designed
to generate 60,000 kilowatts,
and the first expected to pro-
duce power at economically
competitive prices. The sec-
ond reactor will have a ca-
pacity of 300,000 kilowatts,
and is expected to cost \$130
million.

"The slight stoppage
Wednesday (Jan. 24) cost us
a whole day . . . 2,400 man-
hours of productive effort at
between \$4 and \$6 an hour,"
said the GE official. "It's an
expensive proposition."

He would not give the total
number of manhours lost be-
cause of strikes nor what
General Electric has lost
overall in this project but it
is known that GE has suf-
fered a substantial financial
loss.

THE QUALITY of the work-
manship at the site is basic-
ally excellent, the GE spokes-
man said. "We have no qual-
ity problems." But he did in-



A sign in this portion of master control room of the office building warns that controls are now functional.

ply there were some in rela-
tion to production.

He said that "some of the
best people in the country are
here." Most of the labor force
is from New Jersey.

There has been one fatality
and "relatively few severe in-
juries," he said. One man was
beaten and hospitalized dur-
ing a union dispute last April.

Manpower is now at half of
the project's full strength of
1,000. Workers are on a 40-
hour a week schedule, and a
number of key workers —
with overtime have earned up
to \$1,800 a week.

A General Electric source
said, "Overtime is not too un-
common in this business. It's
important to finish the job
any Central needs the plant
and New Jersey needs the
plant."

GE ASSUMES full cost re-
sponsibility for this plant, he
explained, under the "turn-
key" contract. "We have
agreed to design and con-
struct a fully operable nuclear
power station for a fixed
price."

There is no penalty spelled
out in the contract for fail-
ure to complete work by the
determined date, according to
J. E. Logan, vice president
of JCP&L, but there is com-
pensation through "consequen-
tial damages."

"Certain things cannot be
blamed on General Electric,"
Mr. Logan said. "There is a
clause for things beyond
GE's control such as strikes
and acts of God. But flaws
are not excusable."

Before JCP&L would take
a legal position on consequen-
tial damages, said Mr. Lo-
gan, the company will try to
negotiate a settlement with
GE.

Welding repair work, now
under way, will take about
three weeks. It was started

after tests showed 100 thou-
sand cracks in the weld at the
base of the nuclear vessel.
The flaws were discovered af-
ter water leaked during a rou-
tine hydrostatic test. A study
was then begun to find out
what caused the cracks.

THE CRACKS are one-eigh-
ty 8th of an inch, the GE
spokesman said, and cannot
be seen with the naked eye.
How they occurred has not
been revealed. "We can't es-
tablish responsibility with the
reactor manufacturer, Combustion Engineering of Chat-
tanooga, Tenn., or any one
else."

The same tests conducted
by GE "were run before it
left the shop in Chattanooga,
and the potential for them (the
cracks) existed."

The work being done here
consists of removing "the
flawed area and replacing the
part of the removed metal."

The Atomic Energy Com-
mission's interest in the prob-
lem "is directed now to all
reactors," the GE spokesman
said. It has caused the AEC
to take a second look, result-
ing in a detailed investigation
of nuclear generators.

The AEC keeps close tabs
on work here and although a
commission member is not in
residence, representatives
"are continuously with us . . .
we see a representative
at least once a week." AEC
members were at the site
from Jan. 22 until Tuesday.

UNITE, the AEC approves
the repairs, GE cannot apply
for a license to load the fuel
into the reactor. The fuel,
small pellets of uranium di-
oxide, arrived in December
by truck from California
where it is manufactured by
GE. A four-year supply is be-
ing stored on the site, accord-
ing to AEC requirements.

"The generator is essential-

ly ready but we can't do run-
ning until we get steam from
the reactor," the spokesman
said. The turbine building
which houses the 300-foot-long
generator, "the largest in the
world of its kind," is com-
plete except for final details
such as trim.

Reactor and office buildings
are finished. Electrical wiring
is still being done in the
master control room in the office
building. Only air conditioning
remains to be installed in the
storeroom. The ventilation
stack and the waste processing
building have not been com-
pleted.

The GE spokesman said the
grading and paving of the en-
tire area will begin next
month. A "close-out contrac-
tor," J. A. Jones Inc., is now
at the site with 250 workers.

"Jones will finish up the
plant, pick up the pieces, do
cleanup work, and plant mod-
ifications. This is a normal pro-
cedure," he explained.

IN ADDITION, there are 48
men, more than half of Jersey
Central's operating staff of
about 75, at the site train-
ing for the final takeover. The
operations manager has been
at Oyster Creek for a year.

Under the terms of the con-
tract, GE will operate the
reactor, perhaps for 10 to
15 weeks at a low power rating,
before turning it over to
JCP&L.

"It will be tested and re-
tested to prove to Jersey Cen-
tral that we're producing what
we were contracted to do,"
the GE spokesman said.

There is some question as
to whether the

There have been no major
layoffs, something "manage-
ment has been critical of," a
source said. "But layoffs
would be impractical and
would disturb the economy of
the area."

Burns and Roe has already
been named engineer and con-
struction manager for the sec-
ond nuclear station. Westing-
house Electric Corp. will build
the turbine generator and Bab-
cock and Wilcox will provide
the pressurized water steam
supply system.

Burns and Roe is working
on preliminary engineering
studies in preparation for ap-
plying to the AEC for a
license, most likely in April.
Actual construction work
won't start until March 1968.

Even before the official an-
nouncement from JCP&L,
many observers expected Oys-
ter Creek to be selected for the
second reactor, first, because
of the utility's 600 acres of
space, and secondly because of
common facilities — the ad-
ministration building, storeroom
and machine shop, and the
water and meteorological
towers.

Nuclear Plant Jurisdiction Review Set

WASHINGTON — The Atomic Energy Commission has agreed to review one of the restrictions set on the Jersey Central Power and Light Company's atomic power plant on Oyster Creek, Ocean County, N.J.

The utility company received a provisional construction permit for the \$63 million nuclear-fueled generating station last December and has already started construction on a site in Lacey Township.

The Atomic Safety and Licensing Board which granted the provisional permit after October public hearings in Toms River, gave approval with the following conditions:

Conditions Listed

1. That the power level of the plant won't be determined until more technical data is available.

2. That JCP&L furnish to the board within 180 days more information on safety features and design data FEB 20 1955.

3. That the company provide, for confidential review, a copy of its construction contract with General Electric.

The licensing board consisted of Samuel W. Jensch, chief hearing examiner for the AEC, and two non-government experts, Dr. Lawrence A. Quarles, dean of the school of engineering at the University of Virginia, and Dr. Charles D. Winters of Union Carbide Corporation.

The AEC regulatory staff petitioned for a review of the permit, contending the licensing board exceeded its authority in imposing the conditions, and in retaining jurisdiction of the case until the additional data was submitted. JCP&L joined in the petition.

In a decision made Thursday the AEC agreed to review the right of the licensing board to keep jurisdiction of the matter but upheld the board's right to set limitations and conditions on the permit. No date was set for the review.

Has Authority

"It is our view that the (licensing) board has authority to impose the limitations and conditions prescribed by its decision," the AEC ruled. "We accordingly deny the staff's petition for review to the extent that it would seek to open the question of the board's authority to do what it has done in this case. Clarification or modification... is a matter which we will take under considera-

A-Fuel Contract ⁶⁻¹⁵⁶ Disclosure Sought

DEC 8 1955

Com, on Cited
"Yes, I would say very definitely," Mr. Rochester replied. "Particularly the fuel contract. It's a case of Macy's doesn't tell Gimbel's, and why should Gimbel's tell Macy's?"

He said the contract was negotiated "very, very hard." There was one other competitor for the contract. The Westinghouse Electric Corp.

Before he bowed out, Mr. Goodman produced a letter dated Dec. 6 from Sen. Harrison A. Williams Jr., D-N.J., to John Proto, administrative vice president of the New Jersey Industrial Union Council.

Disclosure Demanded
Sen. Williams wrote that he had written to the Atomic Energy Commission asking to have the contract included in the record of the Atomic Safety Licensing Board. ^{pp. 9, 1065}

Mr. Goodman later told newsmen he regarded the secret contract as a symbol of the failure of regulatory agencies to bring out the full facts of the project.

He said Mr. Hyland's position "caught me by surprise." He described it as a "whole new attitude which obviously came from consultation with the company's lawyer."

When he asked Mr. Goodman to give up his seat to a lawyer, Mr. Hyland told him he should have engaged a lawyer and gone about the matter "in an orderly manner."

Mr. Hyland said he was satisfied no public interest would be served by prolonging the discussion.

Press State House Bureau
TRENTON — Secrecy surrounding the construction and nuclear fuel supply contract of the Oyster Creek generating station was criticized by a labor representative yesterday.

The labor man, Leo Goodman, tried without success to have the contract made part of the public record of the state Board of Public Utility Commissioners.

Mr. Goodman said he was secretary of the Atomic Energy technical Committee of the Industrial Union Department of the AFL-CIO, Washington.

At a PUC hearing on the generating station being built in Lacey Township, he said he represented the New Jersey Industrial Union Council.

Labor Man Ousted
But after a preliminary exchange, William F. Hyland, president of the PUC, refused

to let Mr. Goodman continue. Mr. Hyland said PUC rules require representation by a lawyer and, at his request, Mr. Goodman gave up his seat at a lawyers' table.

The contract in question is between the Jersey Central Power & Light Co., which will own and operate the generating station, and the General Electric Co., the prime contractor.

Mr. Goodman described the contract as "the missing bit of evidence" in proceedings before the PUC and the U.S. Atomic Safety Licensing Board.

He said public knowledge of the contract was pertinent to JCP&L's statement that the atomic plant will produce electricity at a competitive price.

Mr. Hyland asked him if he knew of anything in the contract pertaining to safety and health, which was the subject of yesterday's hearing.

Council Disputes Claim
Mr. Goodman replied that he had heard "rumors in Washington."

Alfred A. Rochester, general counsel for JCP&L, cited testimony in earlier proceedings before the PUC dealing with the company's ability to operate the plant economically.

"I see no purpose whatsoever in submitting the contract to this board," he said.

He added that the U.S. licensing board did not require the contract, and he said he knew of no case where a plant construction contract had to be produced.

Mr. Goodman disagreed. He said this was the first case in which a contract was kept secret.

Mr. Hyland asked Mr. Rochester if there was any reason why the contract should be kept secret.

GE Denies Plant Flaws Are Serious

TOMS RIVER — Officials of General Electric Corp. yesterday denied reports of serious flaws in the reactor vessel at the Jersey Central Power & Light Co.'s nuclear generating station being built here.

Leonard Koke, GE resident manager, said a leaking weld can be repaired with a "minimal" delay in construction. He said the \$68 million plant is still expected to be completed late in December or early in January.

The weld flaws were revealed by officials of Nucleonics Week magazine at the American Nuclear Society's atomic industrial forum in Chicago. The magazine said flaws had been detected in 108 of the 137 fuel rod control assemblies.

JCP&L officials refused to be drawn into the controversy.

GE's Problem

"It's a General Electric problem," said Edwin J. Sherratt, JCP&L public relations director.

GE is building the plant for the utility company as a turn-key operation. The electric company won't take possession until all construction work is completed and approved by company inspectors.

Another GE spokesman, meanwhile, said reports emanating from the Chicago convention were "grossly exaggerated."

"We don't think it's a serious matter," Mr. Koke said. "We feel confident, based on our present investigation, that they (the flaws) can be repaired."

GE said the only leak found during a pressure test was "in a field weld on a thimble which is interested in the pressure vessel."

Less Than a Day

"No leaks occurred at any time in any part of the vessel itself," the spokesman said. "The field weld leak can be repaired in less than a day."

"A number of surface cracks have been found on welds on the stub tubes leading into the reactor vessel," the spokesman added. "More than half of these cracks have been ground out already. The deepest of them was 7/32nds of an inch."

"All of the cracks are expected to be fully ground out by the middle of next week. Tests are being made and measurements of the ground welds taken. If the measurements show need for any further weld metal, it will be added. If not, the entire repair job should be completed by the middle of

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Plant Flaws Minimal, GE Tells Press

LACEY TOWNSHIP — A high-ranking executive in the General Electric Co. told the Asbury Park Press yesterday that reports of 108 flaws in pipes at the nuclear power station in Forked River "have been blown out of proportion in Washington."

Raymond Dickeman, in charge of the company's Turn Key projects, made the statement from his San Jose, Calif. office before leaving for a tour of power plants GE is building across the country.

The local \$68 million plant, made for the Jersey Central Power & Light Co., has been the subject of a growing controversy sparked in the Nov. 9 issue of "Nucleonics Week," a McGraw-Hill publication in Washington.

The original story — since corrected by the weekly newsletter — said that leakage at the plant would stop plans for operation next summer.

"The delay will only amount to a few weeks instead of months," said Mr. Dickeman. "The trouble is minimal, poses no hazard, won't cost much money and is generally common in the industry."

He said what were originally reported as "leaks" in piping of the 640,000-kilowatt nuclear generating plant were "merely surface cracks."

He said that of 108 cracks reported in 137 stub type joints at the Oyster Creek plant, only three remain to be corrected. A minor leak in a welded joint was also quickly corrected, he added.

GE officials at the plant said that the entire repair job should be completed this week.

Pipe Leaks At A-Plant Are Studied

Press State House Bureau
NEWARK — The Jersey Central Power & Light Co. is continuing its study to determine the cause of "leaks" which developed in piping at its nuclear generating station being built at Oyster Creek in Lacey Township.

George Ritter, JCPL vice president, told the state Board of Public Utility Commissioners yesterday that the problem has been resolved for the time being, but that company officials still do not know exactly what caused the leaks to develop.

Mr. Ritter explained that the situation developed from some form of "stress" in the piping which has not yet been determined.

He stressed that the leaks do not constitute a safety hazard, but said further studies are being made to guard against a recurrence.

PUC Hearing Continued

The PUC continued the hearing indefinitely to give the utility a chance to complete its studies. A spokesman said a new hearing would be scheduled after about a month.

Mr. Ritter said the nuclear plant will not be ready to start providing electricity for consumers until about the end of the year. He estimated that the utility will be ready to begin loading the reactor with fuel about mid-September.

LEAKS

JCP&L IN A BIND

Rate Rise Foreseen

NEW YORK — Jersey Central Power & Light Co. customers may face the first rate increase in the company's history to make up for increased costs and for money lost on the utility's nuclear generating plant in Lacey Township, N.J.

William G. Kuhns, president of General Public Utilities Corp., parent company of JCP&L, said the company is losing \$60,000 a day because the Oyster Creek nuclear plant wasn't opened on time.

Meanwhile, the Atomic Energy Commission put off the plant opening for "several months" so it can make further tests and inspections. Operations there are already two years behind schedule.

"The whole rate increase proposal has to be evaluated," said Samuel Laird, a JCP&L public relations representative, yesterday. "There's no way to tell at this point what the cost would be to the customers."

Mr. Kuhns wants to apply

to the Board of Public Utilities Commissioners within the next two months for permission to bring the rate of return on JCP&L investments from about six per cent to eight per cent or more.

Before the application is made the company must consider estimates of all its income and expenditures and figure individual customer increases on a complicated rate schedule.

Mr. Laird stressed that the estimated two per cent hike is subject to change after the evaluation and doesn't necessarily mean each customer must pay two per cent more on his electric bill. He said the increase would be the first in the company's 44-year history.

Mr. Kuhns revealed the increase plans were a meeting with the New York Society of Security Analysts. He said two of the other three companies owned by General Public will also seek an eight per cent return.

He predicted JCP&L, N.J. Power and Light Co. and Metropolitan Edison Co., Reading, Pa., would all ask the PUC for permission for the hike within the next two months. No formal application has yet been received by the New Jersey PUC and no hearing dates have been set.

Mr. Laird stressed that the Oyster Creek plant delays are only one of the factors involved in the proposed increase. He said "skyrocketing costs and tight money" are among other factors involved.

Mr. Kuhns repeated previous predictions that General Public was considering a suit against General Electric Co., general contractor of the 640,000 kilowatt Lacey Township plant. However, the executive quickly added that his lawyers haven't found anything, yet in the contract with General Electric to take to court.

The extended leak involved in the latest delay are for piping and relief valves within the reactor structure.

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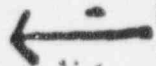
The \$60,000 daily loss comes from the necessity of buying outside power for customers who would have been served by the Oyster Creek station, Mr. Kuhns said.

He said the company has to pay almost double what it would cost if the power came from the JCP&L reactor and that in last year the outside purchases cost the company \$18 million in profit.

Both General Electric and General Public estimate the financial loss from the delays at the plant at "millions."

The initial completion date in the contract was for the spring of 1967 and a clause protects the contractor by allowing the date to be extended under unforeseen circumstances like strikes and acts of God.

General Electric blames much of the delay on strikes



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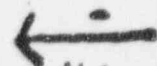
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General Electric blames much of the delay on strikes at the plant.



50-219

OCT 13 1969

Mr. Jay M. Harris
Herman, Carroll, Harris,
Greary and Beck
220-230 Towers Building
Rochester, New York 14614

Dear Mr. Harris:

As requested by Senator Edmund S. Muskie, I am pleased to send you the enclosed report prepared by the Division of Reactor Licensing regarding the matters stated in your letter to him of June 20, 1969 concerning the Oyster Creek Nuclear Power Plant located in Lacey Township, Ocean County, New Jersey.

*1S/LL 10/21/69
LX
RHC*

Sincerely,

Chairman

Enclosure:
Report on Oyster Creek Nuclear
Power Plant Unit No. 1

cc: Senator Edmund S. Muskie

DISTRIBUTION:

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Commr. Larson	P. A. Morris	ORB #1 Rdg.
Secretary (2)	D. J. Skovholt	Gladys Ertter (#2336)
H. L. Price	R. J. Schemel	
C. K. Beck	S. A. Teets	

See attached

BJ04070094 691104
PDR ADOCK 05000219
PDR

OFFICE	DRL	DRL	DRL	OGC	DR	OCR
SURNAME	SATeets:brm/gw	RJSchemel	PAMorris	TBConner	HLPrice	
DATE	9/29/69	9/29/69	10/1/69	10/1/69	10/7/69	10/1/69

REPORT ON THE OYSTER CREEK NUCLEAR POWER PLANT UNIT NO. 1

PREPARED BY THE

DIVISION OF REACTOR LICENSING

During a field hydrostatic test of the Oyster Creek Nuclear Power Plant, a leak was noted near one of the attachments to the reactor pressure vessel. As a result of this observation, a program was initiated by Jersey Central Power and Light Company and the General Electric Company to determine the cause of the leak. The ensuing investigations indicated that certain components of the reactor pressure vessel had experienced an intergranular attack, or what is characterized as stress corrosion cracking. Other components were also found which contained defective welds in terms of porosity and lack of fusion. These findings led to a comprehensive investigative and subsequent repair program to restore the reactor pressure vessel to an acceptable condition.

The intergranular attack noted above was confined to those stainless steel components which were furnace sensitized; i.e., a high temperature heat treatment process which resulted in carbon precipitation at the grain boundaries. Subsequent exposure to a corrodent, in the presence of a stress field, caused the component to crack. The corrodent(s) have not yet been identified. However, a program was implemented that resulted in the following repair activities:

- (a) replacement of the sensitized stainless steel components with nonsensitized material,
- (b) providing a clad overlay of a suitable material that was demonstrated to be resistant to intergranular attack, and
- (c) for the core shroud support ring, additional structures were fabricated and installed in the reactor vessel.

These repair activities were such that an immediate and positive identification of the corrodent(s) was not necessary to confirm the adequacy of the repair program. The defective welds that were found were removed and rewelded as necessary during the repair activities described.

Regarding the release of radioactive materials from this plant, releases within authorized limits are permitted under provisions of AEC regulation 10 CFR Part 20, Standards for Protection Against Radiation. These standards are based on radiation protection guides developed by the Federal Radiation Council and approved by the President for the guidance of Federal agencies. In deriving these guides, the Federal Radiation Council

utilizes the best technical expertise in the field, and takes into account the recommendations of the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection.

Under provisions of AEC regulations, releases of radioactivity are limited to levels such that exposures of members of the public to radioactivity in air, water, and food will meet both national and international standards of radiation protection. Under these provisions, releases from the plant ventilation stack are required to meet limits which specifically take into account possible entry of radioactive iodine and certain other radioactive materials into milk and other items of diet. Releases of radioactivity in liquid effluents from nuclear power reactors have been too low to result in any significant exposure of the public in concentrations of radioactivity in fish, shellfish, or other aquatic biota and subsequent human consumption.

Low levels of radioactive material in gaseous form are released via the plant ventilation stack on a continuous basis during plant operation. Liquid effluents, containing small amounts of radioactive material, are released on a "batch basis" periodically. The liquid wastes are processed through the radwaste system prior to release to the discharge canal which in turn discharges into Barnegat Bay. As part of this processing, liquid wastes remain in holdup tanks until it has been determined that they may be discharged. The facility operating procedures and plant features which include monitoring, retention, and isolation capability are designed to ensure that the radioactive materials discharged on a "batch basis" to Barnegat Bay will be within the limits of 10 CFR Part 20.

50-219
L. B. Low

SEP 17 1969

Honorable Richard L. Ottinger
House of Representatives

Dear Mr. Ottinger:

I am pleased to respond to your letter requesting information on
Oyster Creek Nuclear Power Plant Unit No. 1.

With regard to your concern on the weld and metal problems, a leak
was noted near one of the attachments to the reactor pressure vessel
during the field hydrostatic test. As a result of this observation,
a program was initiated by Jersey Central Power and Light Company
and the General Electric Company to determine the cause of the leak.
The ensuing investigations indicated that certain components of the
reactor pressure vessel had experienced an intergranular attack, or
what is characterized as stress corrosion cracking. Other components
were also found which contained defective welds in terms of lack of
fusion and porosity. These findings led to a comprehensive investi-
gative and subsequent repair program to restore the reactor pressure
vessel to an acceptable condition. This matter is discussed in detail
in our Safety Evaluation, a copy of which is enclosed.

The intergranular attack noted above was confined to those stainless
steel components which were furnace sensitized; i.e., a high tempera-
ture heat treatment process which resulted in carbon precipitation
at the grain boundaries. Subsequent exposure to a corrosive, in
the presence of a stress field, caused the component to crack. As
noted in your letter the corrosive(s) have not yet been identified.
However, a program was implemented that resulted in the following
repair activities:

- (a) replacement of the sensitized stainless steel
components with nonsensitized material,
- (b) providing a clad overlay of a suitable material
that was demonstrated to be resistant to inter-
granular attack, and
- (c) for the core shroud support ring, additional structures
were fabricated and installed in the reactor vessel.

19/11/69
L.B.L.

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P PDR

Dr 5277

SURNAME >

DATE >

These repair activities were such that an immediate and positive identification of the corrodent(s) was not necessary to confirm the adequacy of the repair program. The defective welds that were found were removed and rewelded as necessary during the repair activities described.

Regarding your concern for the release of radioactive materials from this plant, releases within authorized limits are permitted under provisions of AEC regulation 10 CFR Part 20, Standards for Protection Against Radiation. These standards are based on radiation protection guides developed by the Federal Radiation Council and approved by the President for the guidance of Federal agencies. In deriving these guides, the Federal Radiation Council utilizes the best technical expertise in the field, and takes into account the recommendations of the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection.

Under provisions of AEC regulations, releases of radioactivity are limited to levels such that exposures of members of the public to radioactivity in air, water, and food will meet both national and international standards of radiation protection. Under these provisions, releases from the plant ventilation stack are required to meet limits which specifically take into account possible entry of radioactive iodine and certain other radioactive materials into milk and other items of diet. Releases of radioactivity in liquid effluents from nuclear power reactors have been too low to result in any significant exposure of the public as a result of concentration of radioactivity in fish, shellfish, or other aquatic biota and subsequent human consumption.

Low levels of radioactive material in gaseous form are released via the plant ventilation stack on a continuous basis during plant operation. Liquid effluents, containing small amounts of radioactive material are released on a "batch basis" periodically. The liquid wastes are processed through the radwaste system prior to release to the discharge canal which in turn discharges into Barnegat Bay. As part of this processing, liquid wastes remain in holdup tanks until it has been determined that they may be discharged. The facility operating procedures and plant features which include monitoring, retention, and isolation capability are designed to ensure that the radioactive materials discharged on a "batch basis" to Barnegat Bay will be within the limits of 10 CFR 20.

Following our review of the results of additional nondestructive testing of certain components in the reactor facility, we issued to Jersey Central Power & Light Company a full power license to operate the Oyster Creek facility. The license was effective on August 1, 1969. A copy of our Safety Evaluation of the Oyster Creek facility and addenda are enclosed for your information.

Honorable Richard L. Ottinger

- 3 -

I am also enclosing three Commission booklets, "Nuclear Power Plants," "Atomic Power Safety" and "Licensing of Power Reactors," which provide additional information on the Commission's consideration of safety matters with respect to nuclear power plants.

Sincerely,

(signed) Harold L. Price

Harold L. Price
Director of Regulation

Enclosures:

1. AEC Safety Evaluation, 12/23/68
2. Addenda to Safety Evaluation,
4/9/69 and 8/2/69
3. "Nuclear Power Plants"
4. "Atomic Power Safety"
5. "Licensing of Power Reactors"

cc w/o encls:

H. L. Price
C. K. Beck
M. M. Mann
C. L. Henderson
H. Shapar
L. D. Low
R. S. Boyd
R. L. Tedesco

Distribution w/incoming:

AEC PDR
Docket File w/original
DR Reading
DRL Reading
RPB-2 Reading
V. Stello
H. Steele (2)
OCR (2)

See attached for OGC and RPS concurrences.

OFFICE ▶	DRL:RP	DRL	DR	OCR		
SURNAME ▶	RLTedesco:dj	PAMorris	HLPrice			
DATE ▶	8/29/69	8/ /69	8/ /69	8/ /69		

277. Low
50 219, 220, 244

September 15, 1969

MEMO FOR HAROLD L. PRICE

CONTINUATION OF SAFETY VALVE INSPECTIONS

In my memo of August 5, I reported to you on the safety valve situation at Oyster Creek. Since then we have looked into and resolved the safety valve situations for Niagara Mohawk's plant at Nine Mile Point and Rochester Gas and Electric's Ginna plant.

At the Niagara Mohawk Plant, Crosby safety valves had been installed originally. Following a meeting between DRL and Niagara Mohawk, some weeks ago, Niagara Mohawk had agreed to radiograph their safety valve castings. This radiography was carried out under the direction of Crosby and General Electric people at two radiography establishments in Massachusetts - the Arnold Green Company and Sylvester Laboratories. On August 6, Joe Collins and I visited the Crosby Valve Plant in Rhode Island and reviewed radiography films taken of a number of castings. None of the castings examined at that time were judged acceptable, all exhibiting extensive areas of porosity, sand inclusions, and occasional hot spots. Overall, none of the castings could be judged as better than class 5.

Radiographs of some 10 or 12 additional castings were found later to exhibit the same kinds of defects found in the earlier cases and on August 18, I notified Mr. Bert, Plant Manager for Niagara Mohawk, that we could not accept castings of this quality. Later on that same day Mr. Bert called me to say he had arranged with GE to procure Dresser valves to meet the same standards that we had agreed upon for those at Oyster Creek. Installation of these valves on the Niagara Mohawk pressure vessel head was completed on September 10.

Handwritten notes on left margin:
2/1/69
DRL
Ginna

2 copies to CO: I
9/16/69

Handwritten notes on right margin:
10-13-
50-219
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50-244
Rochester
Ginna
Rochester

With regard to safety valves for the Rochester Gas and Electric Plant, these are Crosby valves of a different model and design from those originally planned for the Niagara Mohawk Plant. These valves have cast stainless steel bodies, and I learned from Westinghouse personnel during the week of August 11 that plans had been made for five castings for these valves to be radiographed at Dodge Steel Company, Philadelphia. On August 26, Mr. Collins visited Dodge to review radiography films of these castings. He reported that the castings are approximately class 2 in quality, and on August 27 I notified Westinghouse that the castings are approved.

On September 13, I was notified by Westinghouse that two of the five castings just mentioned had been machined and dispatched to Rochester Gas and Electric for installation at the Ginna plant. (Only two safety valves are required for this plant.)

No delay in plant completion or startup dates has been incurred because of the safety valve situation at either Niagara Mohawk or Rochester Gas and Electric.

Marvin M. Mann

Marvin M. Mann

cc: C. K. Beck
C. L. Henderson
P. Morris
L. D. Low

DR. 2336

OFFICE OF THE CHAIRMAN

(Date)

TO: Dr

For appropriate handling

GM Reply for Chairman's signature

For information: GM _____ Commissioners _____ DR

Remarks _____

Julius H. Rubin
For the Chairman

FROM Sen. Edward S. Muskie (Maine)		CONTROL NUMBER 2336	ACTION COMPLETION DEADLINE
		DATE OF DOCUMENT 9/9/69	FILE CATION
TO Chairman Seaborg		ACTION PROCESSING DATES Acknowledged _____ Interim Report _____ Final _____	INFORMATIONAL COPY DISTRIBUTION ____ Chairman _____ ADNS _____ COM ____ GM _____ ADA _____ SS ____ Dep. Dir. _____ OOC _____ SLR ____ A. D. _____ RL _____ ALL
DESCRIPTION Ltr <input type="checkbox"/> Original <input checked="" type="checkbox"/> Copy <input type="checkbox"/> Other		REMARKS Note: Respond direct to Mr. Harris	
Ltr fm Wayne M. Harris re weld and metal failure problems at Oyster Creek and requesting any current information re release of radioactive material to the atmosphere and storage at Bay			
REFERRED TO	DATE	Is notification to the JOAR recommended?	
Morris f/action	9/17/69		
Cys: Beck			
Moran			
Henderson			
Low ✓			
Shapiro			
FDR (50-219)			

50-219

STANFORD R. WATKINS, W. VA., CHAIRMAN
 JOHN R. M. YOUNG, OHIO
 EDWARD S. MUSKIE, MAINE
 R. EVERETT JOHNSON, N.C.
 RICHARD BATH, IND.
 JOSEPH M. MONTOYA, N. MEX.
 WILLIAM B. SPONG, JR., VA.
 THOMAS F. FAYLTON, MD.
 MIKE CRAVELL, ALASKA

JOHN SHERMAN COVINGTON, N.C.
 J. CALVIN WOODS, DEL.
 HOWARD H. BAKER, JR., TEXAS
 ROBERT J. DOLE, KANS.
 EDWARD J. BURNETT, FLA.
 ROBERT W. PACKWOOD, OREG.

RICHARD S. HOYCE, CHIEF OF STAFF AND STAFF DIRECTOR
 A. B. INTYBY, JR., CHIEF OF STAFF AND CLERK
 M. BARRY, LEGAL COUNSEL

United States Senate

COMMITTEE ON PUBLIC WORKS

WASHINGTON, D.C. 20510

September 9, 1969

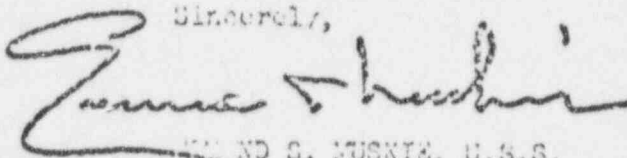
Leon T. Seaborg, Chairman
 Atomic Energy Commission
 Washington, D. C.

Dear Dr. Seaborg:

Attached is a letter from Mr. Warren M. Harris of the law firm of Keenan, Farrell, Harris, Creamer & Deek, Rochester, New York, and an enclosure thereto.

I would appreciate your responding directly to Mr. Harris and sending me a copy of your reply.

Sincerely,



EDWARD S. MUSKIE, U.S.S.
 Chairman, Subcommittee
 on Air and Water Pollution

18/LDL 9/18/69
 LK

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 P PDR

Rec'd Off. Dir. of Reg.
 Date 9/17/69
 Time 11:05

DR-2336

50-219

Distribution: w/enc. 2

Docket File
 Chairman (2)
 Commissioner Ramey
 Commissioner Johnson
 Commissioner Thompson
 Commissioner Larson
 Secretary (2)
 OCR (2)

DR Reading
 DRL Reading
 RPB-2 Reading
 V. Stello
 H. Steele (2)
 PDR

AUG 29 1969

Honorable Harrison A. Williams, Jr.
United States Senate

Dear Senator Williams:

H. L. Price
 C. K. Beck
 M. M. Nann
 C. L. Henderson
 L. D. Low
 H. K. Shapar
 R. S. Boyd

bcc: Edward J. Bauser
 Executive Director
 Joint Committee on Atomic Energy

Thank you for your August 19, 1969 letter requesting information on the Oyster Creek License Final Unit No. 1.

The matters raised in your letter are discussed in the attached Staff Report. Specifically, it is noted that a full review of this plant was completed only a few months ago. The final report, which included a detailed review of radiation which was required to be submitted to one of the reactor piping and safety valves. These activities were accomplished in the final report. The following are the findings of the final report:

1. The final report, which included a detailed review of radiation which was required to be submitted to one of the reactor piping and safety valves. These activities were accomplished in the final report. The following are the findings of the final report:

2. The final report, which included a detailed review of radiation which was required to be submitted to one of the reactor piping and safety valves. These activities were accomplished in the final report. The following are the findings of the final report:

For your further information, I also enclose two leaflets, "Licenses of Power Reactors" and "How to Know Safety," which contain information concerning the Commission's regulatory procedures for the licensing of nuclear power reactors.

Should you desire further information on this matter, please let me know.

Cordially,

8304070115 691104
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 P PDR

Chairman

- Enclosures:
- Staff Report
 - Leaflets

IS/IDL 9/5/69
 LK
 RHC
 O'R
 JBR

Enclosed
 draft by
 JBR

DR-2301

OFFICE ▶	DRL:RP	DRL:RP	DRL:RP	OGG: B. J. [unclear]	DR [unclear]	OCR
SURNAME ▶	RLTedesco/dj	RSBoyd	PA [unclear]	[unclear]	HLPrice	[unclear]

SUMMARY OF SAFETY REVIEW OF OYSTER CREEK PLANT PROPOSED OPERATION
PREPARED BY THE AEC REGULATORY STAFF

Our safety review of the Oyster Creek plant has been proceeding continuously since January 25, 1967, when the Jersey Central application for a provisional operating license was first received. This review has been conducted with the advice of the Advisory Committee on Reactor Safeguards, as required by the Atomic Energy Act. The results of our detailed review and evaluation of the proposed operation of the facility, including the construction difficulties, are presented in our Safety Evaluation and Addenda (copies attached). Our actions regarding two specific matters raised in Senator Williams' letter of August 13, 1969 (i.e., cracks and defective welds in certain components and additional inspection of piping and relief valves) are summarized below.

During the course of a field hydrostatic test of the reactor vessel in September 1967, a leak was noted near one of the vessel attachments. As a result of this observation, a program was initiated by Jersey Central Power & Light Company and the General Electric Company to determine the cause of the leak. The ensuing investigations indicated that 123 out of 137 of the sensitized stainless steel control rod drive stub tubes attached to the reactor pressure vessel had experienced intergranular attack or what also has been characterized as stress corrosion cracking. In addition, it was found that the shroud support ring and the reactor vessel nozzle safe ends had

experienced intergranular attack. The field welds that join the control rod drive stub tubes to the control rod drive housings and the field welds on instrument lines were also found to be defective in terms of lack of fusion and/or porosity. These findings led to a comprehensive investigation and subsequent repair program to restore the reactor pressure vessel and associated components to a condition not less satisfactory than approved for the original design.

The intergranular attack noted above was confined to those stainless steel components which were furnace-sensitized, i.e., a high temperature heat treatment process which resulted in carbon precipitation at the grain boundaries. Subsequent exposure to a corrodent(s) and in the presence of a stress field caused the component to crack. A program was implemented that resulted in the following repair activities:

- (a) replacement of the sensitized stainless steel components with nonsensitized material,
- (b) provision of a clad overlay of a material that was demonstrated to be resistant to intergranular attack,
- (c) provision of a redundant shroud support ring support structure, and
- (d) removal and rewelding of the defective welds that were found.

On the basis of our field inspections and review of techniques and results of corrective actions, we concluded

that the various repair activities conducted by Jersey Central and General Electric did restore the reactor pressure vessel to an acceptable condition with regard to the health and safety of the public. Following this extensive review, in December of 1968, we published a notice of intent to issue an operating license for the Oyster Creek plant.

On April 17, 1969, our notice of actual issuance of a 5-megawatt (thermal) license for the Oyster Creek facility was published in the Federal Register (34 F.R. 6547). This license was issued to permit fuel loading and low power physics testing, on a timely basis, although certain outstanding matters not related to the pressure vessel problems remained to be resolved before a full power operating license could be issued. These matters related to documentation of the quality of certain piping. The applicant conducted investigations of the fabrication techniques and inspections of this piping during April and May of 1969 and presented the results of this work in Amendment No. 53, dated June 12, 1969 (copy attached). Following our review of this information, we concluded that certain additional inspections, which were described in the July 16, 1969 issue of the Wall Street Journal, were required to complete documentation of satisfactory results of nondestructive examination of the primary coolant system. These requirements were discussed with the applicant at a meeting on July 10, 1969, and confirmed in a letter to the applicant dated July 29, 1969 (copy attached).

The applicant performed various additional inspections which were reviewed and evaluated by representatives of the Commission prior to issuance of the 1600-megawatt (thermal) license on August 1, 1969. Original estimates of two or more months to complete this work were substantially reduced because of special efforts by the General Electric Company, the applicant and the Commission not to cause unnecessary delay in permitting operation of the plant. These efforts included three-shift operation of technical specialists of the companies and concurrent on-site review by the Commission staff. As evidenced by the foregoing chronology, many months were involved in resolving all matters related to safety for the Oyster Creek plant. During the three-week interval indicated in your letter, the final actions required were essentially limited to additional inspections and record verifications of certain reactor piping and safety valves.

The Commission will continue to follow the operation of the facility throughout its operating lifetime. The applicant is required by his license to conduct surveillance and inspection of the facility components. Assurance that the applicant is complying with these requirements is obtained by periodic inspection visits by representatives of the Commission.

Attachments:

1. Safety Evaluation and Addenda
2. Amendment No. 53
3. AEC ltr to Jersey Central dtd 7/29/69

ALPH TARRANT, TEX., LEADSMAN
 JACOB E. JAVITS, N.Y.
 WHISTON L. PRUITT, VT.
 PETER B. DOMINGUEZ, I.
 GEORGE HUGHES, I.
 RICHARD S. SCHWARTZ, I.
 HENRY E. HARRIS, I.
 WILLIAM B. KERR, OHIO

50-219

United States Senate

COMMISSION ON
 LABOR AND PUBLIC WELFARE
 WASHINGTON, D.C. 20510

ROBERT G. FORD, ILL., PRESIDENT
 ASHER R. FORDSIEP, GENERAL COUNSEL

August 13, 1969

The Honorable Glenn T. Seaborg
 Chairman
 Atomic Energy Commission
 Washington, D. C.

Dear Mr. Chairman:

The August 1st authorization by the Atomic Energy Commission to increase the Oyster Creek Atomic Power Plant to full power and the related potential dangers created by its operation are distressing to me.

On July 16, after three months of trial operation of the plant, the Wall Street Journal and reliable trade journals reported that a decision was made by the Atomic Energy Commission to further inspect the reactor's piping and relief valves before full power operation could begin.

I am at a loss as to how in just three short weeks such a dangerous and complex facility as an atomic power plant can change its status from a possible source of danger to a safe full-power operation.

I have learned through consultation with your Agency and articles in various trade journals that during the plant's construction it was discovered that of the 137 fuel lines, 123 were found to contain cracks. And, at every point where the tubes and control-rod housings were joined around the reactor's vessel, defects existed in the welding.

We both know that the plant has had a history of serious defects and I am sure that you are fully aware of the dangers and problems created by the plant's operation.

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 P PDR

DO 0001

The Hon. Glenn T. Seaborg

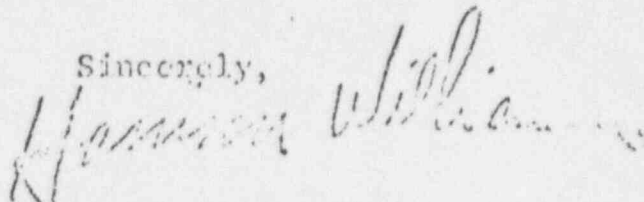
-2-

8/13/69

I would appreciate an immediate full report of this recent decision and the related facts surrounding the Oyster Creek operation. Further, I would like to know what steps your agency has taken to assure the safety, health, and security of the region's environment and people.

With best wishes,

Sincerely,


Harrison A. Williams, Jr.

HAW:jcs

SRI's CO:I, II, III,
IV, V

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RE: INSPECTION OF SAFETY VALVES - OYSTER CREEK

The enclosed memorandum from Dr. Mann to Mr. Price,
concerning his inspections of the adequacy of
the reactor safety valves and ATAPCO pipe in-
spections for Oyster Creek, is forwarded for
information.

Enclosure:
Memo Mann to Price 8/5/69 *see serial.*

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PDR ADOCK 05000219
P PDR

Original signed by
J. G. Keppler

50-219

OFFICE ▶	OK CO	CO			
SURNAME ▶	JG Keppler: kbp	JPO Reilly			
DATE ▶	5/13/69	8/14/69			
	CO: BQ	J. P. O'Reilly, CO: BQ			8/14/69

Form AEC-347R-9 U.S. GOVERNMENT PRINTING OFFICE: 1969

THRU: