



Duquesne Light

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July 28, 1986
ND1NSM:2267

U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Attn: Dr. Thomas E. Murley, Regional Administrator
Region 1
631 Park Avenue
King of Prussia, PA 19406

QA Program Description Change

Gentlemen:

A copy of the revised Quality Assurance Program description is attached for information.

Changes to the Quality Assurance Program description were evaluated in accordance with 10 CFR 50.54(a). It was determined that the changes do not reduce the commitments in the program description previously accepted by the NRC, and therefore, were submitted to the NRC in accordance with the requirements of 10CFR50.71 as provided in 10CFR50.54(a)(3).

We are satisfied that this method of reporting changes to the QA Program description is in full agreement with the Code of Federal Regulations.

Very truly yours,

G. S. Sovick
Acting Director, Licensing

Attachment

cc: Mr. W. M. Troskoski, Resident Inspector
U. S. Nuclear Regulatory Commission
Beaver Valley Power Station
Shippingport, PA 15077

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APPENDIX AQUALITY ASSURANCE

A.1 QUALITY ASSURANCE PROGRAM

A.1.1 Quality Assurance Program - Overall Description

A project Quality Assurance Program is in effect for the design, procurement, fabrication, erection and testing of components and systems, operations and maintenance of the Beaver Valley Power Station Unit No. 1 (BVPS-1). Ultimate responsibility for the Quality Assurance (QA) Program rests with the Applicant, Duquesne Light Company (DLC). The program entails quality assurance throughout all phases of this project as follows:

1. Conceptual design
2. Detailed engineering and design
3. Assembly and maintenance of quality control documentation for shop and field
4. Vendor selection
5. Surveillance of Vendor's shop inspection
6. Witnessing of key shop tests
7. Field inspection and quality control of erection
8. Equipment, installation, and testing specifications
9. Checkout of mechanical, fluid, and electrical systems
10. Startup testing
11. Periodic inservice performance tests.

The detailed working implementation of the Quality Assurance Program during the design and construction phase was delegated to Stone & Webster Engineering Corporation (S&W), as agents for Duquesne Light Company, and to Westinghouse Electric Corporation, contractor for the Nuclear Steam Supply System. The Quality Assurance Organization shown in Figure A.1-1 describes the relationships which implemented the Duquesne Light Company Quality Assurance Program during the design and construction phase of BVPS-1.

Specific Duquesne Light Company responsibility for auditing the Quality Assurance Program rests with the Quality Assurance Manager, who reports directly to the Vice-President, Nuclear Group.

Figures A.2-1 and A.2-2 show the Duquesne Light Company organization for quality assurance during the design and construction phase of BVPS-1. Figures A.2-3 and A.2-4 show the Duquesne Light Company organization for quality assurance for the operations phase of BVPS-1. Figures A.3-1, A.3-2, and A.3-3 show the S&W quality assurance organization. Figures A.4-1, A.4-2, and A.4-3 depict the quality assurance organization of Westinghouse, the supplier of the Nuclear Steam Supply System. The S&W Quality Assurance Coordinator had direct contact with the Duquesne Light Company Quality Assurance Manager for quality assurance matters, as well as with the Westinghouse Project Manager during the design and construction phase.

Appendix A is organized as follows:

- A.2 - Duquesne Light Company Quality Assurance Program
- A.2.1 - Duquesne Light Company Design and Construction Quality Assurance Program applicable at the latest revision of the original FSAR (Amendment 18 dated November 1975), BVPS-1
- A.2.2 - Present Duquesne Light Company Operations Quality Assurance Program, BVPS-1
- A.3 - Stone & Webster Engineering Corporation Quality Assurance Program used during the Design and Construction Phase, BVPS-1
- A.4 - Westinghouse Power Systems Division Quality Assurance Plan used during the Design and Construction Phase, BVPS-1
- A.5 - Westinghouse Nuclear Fuels Division Reliability and Quality Assurance Program, BVPS-1

A.1.2 Quality Assurance Categories

Equipment and structures, whether safety related or not, are subject to engineering review, and shop and field inspection to a degree proportional to the value of the equipment and to its contribution to safety, accessibility, reliability and operability.

The three quality assurance categories defined below are not levels of quality per se, but rather denote differences in application of the Quality Assurance Program. Category I and only Category I is intended to include activities affecting structures, systems, portions of systems, and equipment to which the 10CFR50, Appendix B criteria apply, i.e., structures, systems, portions of systems, and components which are safety related. Within that category, there may be differences in the quality specified, depending upon the nature of the component and upon its contribution to public safety (e.g., the

rebars in the intake structure differ in this respect from the material in the reactor vessel), but the formal Quality Assurance Program incorporating the intent of the eighteen criteria in Appendix B to 10CFR50 applies without exception to all items classified as Category I.

The equipment and structures in Categories II and III are not safety related when considered in the above context. Hence, the applicability of the Quality Assurance Program for these categories is not determined by the eighteen criteria in Appendix B to 10CFR50 but rather by the Applicant's policy and is a matter of agreement between the Applicant and his agents and suppliers. Costly and critical power generation equipment in Category II normally are specified and inspected to a degree comparable to that afforded important safety-related equipment in Category I, but procedural aspects of quality assurance may be somewhat less stringent if so agreed to by the Applicant.

The various "classes" such as "piping class", Seismic Category I, etc., should not be confused with the quality assurance categories nor considered as subdivisions of the three categories.

The three quality assurance categories are defined as follows:

1. Category I - Plant systems, or portions of systems, structures and equipment whose failure or malfunction could cause a release of radioactivity that would endanger public safety. This category also includes equipment which is vital to a safe shutdown of the plant and the removal of decay and sensible heat, or equipment which is necessary to mitigate consequences to the public of a postulated accident.
2. Category II - Plant systems, portions of systems, structures and equipment that are essential for the reliable generation of power but which are not essential for a safe shutdown. Failure of this equipment could result in loss of generation but would not endanger public safety.
3. Category III - Plant systems, portions of systems, structures, and equipment which are not essential for the reliable generation of electricity and which do not contain radioactive material or whose failure could not result in the release of radioactive material.

The term "essential for the reliable generation of electric power" in the definition of Category II is interpreted to mean structures, systems and components, whose failure would result in a halt of electric power generation in about 8 hours or less.

The term "not essential for the reliable generation of electricity" in the definition of Category III is interpreted to mean structures, systems and components, whose failure would not result in the halt of electric power generation in about 8 hours or less.

The various structures, systems and components in the BVPS-1 which are Category I are listed in the Duquesne Light Company Operations Quality Assurance Program.

Conditions which may affect quality are documented and the corrective action is verified through the mechanisms provided in the Duquesne Light Company, S&W, and Westinghouse Manuals.

A.2.1.17 Quality Assurance Records

The official quality file for the BVPS-1 is maintained at the S&W Field Quality Control office. This file is monitored and audited by the Duquesne Light Company.

Included in the records maintained are purchase orders, drawings, specifications, correspondence, procedures, audit reports, minutes of meetings, quality assurance checklists, codes and standards, and similar material.

A file system has been established to assure retrievability of such records. In the case where records are not stored at the site, locations for storage are reviewed and/or approved by the Duquesne Light Company. Vendors retaining records for certain periods of time are instructed that such records must be submitted to the applicant at the conclusion of his (the vendor) storage responsibility.

A.2.1.18 Audits

The Duquesne Light Company retains the ultimate responsibility for Quality Assurance for BVPS-1. This responsibility is exercised mainly through an audit program. These audits are performed against the S&W and Westinghouse commitments. These include quality assurance/quality control procedures, specifications, drawings, instructions, and similar information. Internal audits of the Duquesne Light Company are also documented and maintained in the file.

As agents for the Duquesne Light Company, S&W also performs audits at the vendor shops through their Procurement Quality Control Division and audits at the site through the Field Quality Control Division. Both divisions are audited periodically by the Duquesne Light Company.

Audit reports are utilized to assess the adequacy of the Duquesne Light Company Quality Assurance Program. A record of all audits is maintained and periodically reviewed to assure necessary follow-up action. Audits are reported at each Project Management Committee Meeting to assure that the necessary level of management is involved and has an awareness of the audit program.

All audits are performed utilizing a preplanned checklist. The checklist will include address to the specific criteria of Appendix B of 10CFR50, results of previous audits, inspection reports, nonconformance reports, adherence to specifications, and other items as identified in the respective organization quality assurance manuals.

A.2.2 Operations Quality Assurance Program

An Operations Quality Assurance Program is established by Duquesne Light Company for the operations phase of BVPS-1. The program is written to conform to the requirements of 10CFR50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants," and NRC Regulatory Guide 1.33 "Quality Assurance Requirements (Operations)." The NRC Regulatory Guides and American National Standards Institute (ANSI) Standards are utilized as indicated in the Attachment to Section A.2. The following exception should be noted: An alternate set of Quality Assurance Terms and Definitions has been developed, and is included as Appendix A to the Duquesne Light Company Quality Assurance Program Manual. The purpose of the Operations Quality Assurance Program is to assure that the installed quality of BVPS-1 is maintained throughout the life of the plant.

The Operations Quality Assurance Program applies to all safety-related (Category I) structures, systems, and components, throughout the life of the plant. The Category I structures, stems, and components are identified in the Operations Quality Assurance Program.

A.2.2.1 Organization

The organizations which have responsibilities for performing activities affecting quality during the operations phase of BVPS-1 are shown in the organization chart of Figures A.2-3 and A.2-4. The Operations Quality Assurance Program identifies in detail the functional responsibilities of the organizations within the Duquesne Light Company which participate in quality-related activities.

The Operations Quality Assurance Program is established and managed by the Quality Assurance Manager, who reports to the Vice-President, Nuclear Group. The Quality Assurance Manager has the authority to report quality matters to any level necessary within the Duquesne Light Company, including: the Chairman of the Board; the President and Chief Executive Officer; the Vice-President, Nuclear Group; the Vice-President, Administrative Services Group and the Vice-President, Power Supply Group in order to establish effective corrective action. The Duquesne Light Company Chairman of the Board, the President and Chief Executive Officer; the Vice-President, Nuclear Group, the Vice-President, Administrative Services Group, and the Vice-President power Supply Group comprise those members of the Executive management Group who have Nuclear responsibility.

The effort of the Quality Assurance Manager is directed solely to quality assurance. He purposely has no responsibilities for station costs or schedule considerations.

A.2.2.10 Inspection

The Operations Quality Assurance Program requires that measures for the inspection of activities affecting quality be established by or for the organization performing the activity to verify conformance with the documented instructions, procedures, and drawings for accomplishing the activity. Such inspection shall be performed by individuals other than those who performed the activity being inspected. Examinations, measurements, or tests of materials or products processed shall be performed for each work operation where necessary to assure quality. If inspection of processed material or products is impossible or disadvantageous, indirect control by monitoring processing method, equipment and personnel shall be provided. Both inspection and process monitoring shall be provided when control is inadequate without both. If mandatory inspection hold points, which require witnessing or inspecting by a designated representative of the Duquesne Light Company and beyond which work shall not proceed without the consent of its designated representative are required, the specific hold point shall be indicated in appropriate documents.

When required by governing codes and standards, inspectors shall be qualified in accordance with those codes and standards. In these cases documentation demonstrating the current qualifications of the inspectors shall be maintained. Also inspection procedures shall be made available for use by the inspector prior to the performance of the inspection. Such procedures shall include accept/reject criteria, a description of the method of inspection and a directive for the reporting of results including nonconformance.

Measures shall include provisions which require items that have been reworked or repaired following the original inspection to be subjected to a reinspection. Acceptance criteria for the reinspection shall be, as a minimum, equal to that which was specified for the original inspection.

During the operational phase, the Operations Quality Control Department of the Quality Assurance Unit will be responsible for performing the inspection requirements. The Quality Assurance Unit will review the administrative procedures of the Operations Quality Control Department and will audit safety-related activities of the Operations Quality Control Department periodically.

A program for inservice inspection of completed structures, systems, and components shall be established by the Duquesne Light Company in accordance with the requirements of Section XI of the ASME Boiler & Pressure Vessel Code.

The Inservice Inspection Department of the Quality Assurance Unit will be responsible for coordinating, reviewing, and periodically updating the Inservice Inspection Program. If the services of an

outside contractor are utilized for the Inservice Inspection Program, the vendor must be evaluated in accordance with the requirements of Section A.2.2.7 and his activities shall be monitored by the Director, Inservice Inspection.

These requirements shall be incorporated in written instructions and procedures of various Duquesne Light Company groups, units and departments as applicable. In addition, vendors and contractors supplying material, equipment and services for Category I systems shall be required to address the applicable portions of these requirements in written instructions and procedures.

A.2.2.11 Test Control

The Operations Quality Assurance Program requires that a test program be established to assure that all testing demonstrates that structures, systems, and components will perform satisfactorily in service. Testing shall be identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits contained in applicable design documents. The test program shall include, as appropriate, proof tests prior to installation, preoperational tests, and operational tests of structures, systems, and components.

Test procedures shall include:

1. Detailed instructions regarding the method by which the test shall be performed
2. Identification of requirements for any special processes to be used during testing
3. Identification of hold points for witnessing by a specified inspector
4. Definite acceptance and rejection limits
5. Means for recording and maintaining test data and results.

Test procedures shall also identify prerequisites which shall include, but not be limited to, the use of calibrated equipment by trained, qualified, and, as appropriate, licensed or certified personnel. Prerequisites shall also include the preparation, condition and completeness of the item to be tested and the environmental conditions necessary. Test results shall be documented and evaluated by qualified personnel to assure that test requirements have been satisfied.

Applicable portions of these requirements shall be incorporated in written instructions and procedures prepared by various Duquesne Light Company groups, units and departments. In

comprehensive system of planned and periodic audits be carried out to verify all aspects of the quality assurance program and to determine the effectiveness of the program. Audits shall be performed in accordance with written procedures or checklists by appropriately trained personnel not having direct responsibilities in the areas being audited. Audit results shall be documented and reported to management having direct responsibility in the area audited. Responsible management will take the necessary action to respond to any deficiencies or nonconformances identified in the audit report. Follow-up action, including re-audit of deficient areas, will be taken as necessary to assure that all deficiencies or nonconformances noted have been corrected.

The Duquesne Light Company Quality Assurance Unit is responsible for the auditing of all company groups, units or departments as well as company contractors or subcontractors participating in the Duquesne Light Company Quality Assurance Program. These audits include, but are not limited to:

1. Audits to provide an objective evaluation of quality-related procedures, instructions, and practices
2. Audits to evaluate the effectiveness of the implementation of these procedures, instructions, and practices
3. Audits to determine the adequacy of work areas, activities, and processes
4. Audits to verify that required documentation and records are complete and are adequately controlled and maintained

These audits will be performed at a frequency commensurate with their importance as well as the quality record of the group involved. Audits will be performed with pre-planned audit checklists. Audits may be announced or unannounced. Audit reports will be prepared on a timely basis by the person(s) performing the audit. The audit report will clearly identify any nonconformances or deficiencies and will assign the responsibility for disposition. Copies of all audit findings and recommendations are transmitted to the appropriate management level of the organization involved as well as to the Vice-President of the Nuclear Group. The audit program shall include vendor surveys/audits necessary to prepare and maintain an approved vendors' list as described in Section A.2.2.4.

The audit program is supplemented by the Offsite Review Committee which performs audits within the Nuclear Group to assess the technical adequacy of procedures as well as their implementation. The Offsite Review Committee, as determined by the Technical Specifications, audits the station operations including the performance of both equipment and operating personnel. The Offsite Review Committee may delegate the responsibility for the actual auditing to a separate group but reviews the results of any such audits and initiates action to correct deficiencies as a result of the audit.

In addition, the Operations Quality Control Department performs the necessary checks, records reviews, and inspections to verify that safety-related activities were performed in accordance with applicable codes and standards and were done by qualified personnel using written procedures, and that appropriate data was obtained, evaluated, results disseminated, and that required records were maintained.

The Duquesne Light Company Quality Assurance Program will be audited on a biennial basis by the Vice-President of the Nuclear Group or his designee to assess the status and adequacy of the program.

A.5 WESTINGHOUSE NUCLEAR FUEL DIVISION RELIABILITY AND QUALITY ASSURANCE PROGRAM

Section A.5 describes the Westinghouse Nuclear Fuel Division Reliability and Quality Assurance Program applicable during the initial fuel of BVPS-1. For convenience, this section is retained in the Updated FSAR as a history of the program in effect during the initial fueling.

A.5.1 Quality Assurance Program

The Reliability and Quality Assurance Program of the Westinghouse Nuclear Fuel Division, as summarized in WCAP-7800, has been developed to serve the division in planning and monitoring its activities for the design and manufacture of nuclear fuel assemblies and in the manufacture of the associated core components.

The program provides for control over all activities affecting product quality, commencing with design and development and continuing through procurement, materials handling, fabrication, testing and inspection, storage, and transportation. The program also provides for the indoctrination and training of personnel and for the auditing of activities affecting product quality through a formal auditing program.

A.5.2 Manufacturing

Quality Control philosophy is generally based on the following inspections being performed to a 95 percent (95 x 95) confidence that at least 95 percent of the product meets specification, unless otherwise noted, using either a hypergeometric function with zero defectives for small lots or the latest revision of MIL-105D for large lots. This confidence level has been based on past experience gained during the manufacturing of uranium cores. The following inspections are included.

Components Parts

All parts received are inspected to a 95 x 95 confidence level. The characteristics inspected depend upon the component parts and includes dimensional, visual, check audits of test reports, material certification and nondestructive testing such as X-ray and ultrasonic. Westinghouse materials process and components specifications specify in detail the inspection, to be performed.

All material used in the manufacture of this core is accepted and released by Quality Control.

Pellets

Inspection is performed to a 95 x 95 confidence level for the dimensional characteristics such as diameter, density, length and squareness of ends. Additional visual inspections are performed

for cracks, chips and porosity according to standards established at the beginning of production. These standards are based upon standards used in previous cores which have in turn served as standards for over 50 million pellets manufactured and used in operating cores. Density is determined in terms of weight per unit length and is plotted on zone charts used in controlling the process. Chemical analyses are taken on a daily sample basis throughout pellet production.

Rod Inspection

Fuel rod inspection techniques used by Westinghouse during the plant operations phase are described in Section 3.2 of this FSAR.

Preoperational Rod Inspection consisted of the following 100 percent nondestructive inspections and is based on the experience specifications, procedures and standards established on previously manufactured and operated cores.

1. Leak Testing - Each rod is tested to a known leak using mass spectrometry with helium being the detectable gas. This is the system used previously on the leak test of over 300,000 rods.
2. X-ray - All fuel rod weld enclosures are X-rayed using weld correction forms. X-rays are taken in accord with ASTM E-142-68, "Controlling Quality of Radiographic Testing", using 2-2T as the basis of acceptance.
3. Dimensional - All rods are dimensionally inspected prior to final release and upgrading. The requirements include such items as length, caber, and visual inspection.
4. Fluoroscope - 100 percent of the fuel rods are tested to ensure proper plenum dimensions and ensure that no significant gaps exist between pellets.

This ensures that 100 percent of the rod welds have been checked by several different techniques. Full traceability of fuel rods and fuel rod components is also established by Quality Control.

Assembly

Inspection consists of 100 percent inspection for drawing requirements.

Other Inspections

The following inspections are performed as part of the routine inspection operation:

1. Measurements other than those specified above which are critical to thermal and hydraulic analysis were obtained to enable evaluation of manufacturing variations to a 95 x 95 confidence level.
2. Tool and gauge inspection and control, including standardization to primary and secondary working standards. Tool inspection is performed at prescribed intervals on all serialized tools. Complete records are kept of calibration and condition of tools.
3. Check audit inspection of all inspection activities and records to ensure that prescribed methods are followed and that all records are correct and properly maintained.

Process Control

To prevent the possibility of mixing enrichments during fuel manufacture and assembly, strict enrichment segregation and meticulous process control are exercised.

The UO_2 powder is kept in sealed containers by blend. The contents are fully identified both by descriptive tagging and preselected color coding. A Westinghouse identification tag completely describing the contents is affixed to the containers before transfer to powder storage. Isotopic content is confirmed by sample isotopic analysis or 100 percent gamma scanning of powder containers.

Powder withdrawal from storage can be made by only one authorized group which directs the powder to the correct pellet production line. All pellet production lines are physically separated from each other and pellets of only a single enrichment and density are produced in a given production line.

Finished pellets are placed on trays having the same color code as the powder containers and transferred to segregated storage racks within the confines of the pelleting area. Samples from each pellet lot are tested for isotopic content and impurity prior to acceptance by Quality Control. In this storage area physical barriers prevent mixing of pellets of different densities and enrichments. Unused powder and substandard pellets to be analyzed and reprocessed are returned to storage in the original color coded containers. Loading of pellets into the cladding is performed in isolated production lines and again only one density and enrichment is loaded on a line at a time.

A serialized traceability sticker is placed on each fuel tube which identifies the contract and enrichment. The sticker is color coded to the original pellet tray code for visual identification. The end plugs are inserted and the bottom end plug is permanently identified to the contract and enrichment and welded to seal the tube. The fuel tube remains color coded and traceability identified until just prior to installation in the fuel assembly. The color coding and end plug

identification character and traceability stickers provide a cross reference of the fuel contained in the fuel rods. All fuel rods are gamma scanned over the full length for isotopic content prior to acceptance for assembly loading.

At the time of installation into an assembly, the color coding and traceability stickers are removed and a matrix is generated to identify each rod in its position within a given assembly.

An inspector verifies that all fuel rods in an assembly have the same end plug identification, and that the top nozzle to be used on the assembly carries the correct identification character describing the fuel enrichment and density for the core region being fabricated. The top nozzle identification then becomes the permanent description to the fuel contained in the assembly.

A.5.3 Operating Experience

The quality assurance program with respect to fuel design and fabrication minimizes or reduces potential rod failures due to clad hydriding, clad-flattening and UO₂ clad interactions.

Evaluation of fuel leakage in Region 3 of the Besnau Unit No. 1 and Ginna cores had led to the conclusion that it was caused primarily by excess moisture in those rods. This caused local hydriding and subsequent breaching of the Zircaloy clad. Test programs initiated prior to and concurrent with the initial development of leaks at Besnau and Ginna led to the implementation of design and fabrication changes long before the postulated cause of the leaks was confirmed by the site examinations. These changes were directed toward reducing and controlling the fuel-contained moisture levels. Operating experience since that time prove that they were successful.

Clad-flattening has been observed in non-pressurized fuel rods during refueling shutdowns at several reactors. BVPS-1 fuel included fuel rod pre-pressurized and fuel fabricated to a density of 95 percent theoretical using improved manufacturing processes. The Westinghouse fuel design sequence includes a clad-flattening evaluation to ensure that clad-flattening is precluded during fuel core life and that the potential for UO₂ clad interactions is minimized. Detailed clad stress analyses are strongly affected by the control rod management which is selected during the final nuclear design and the specific fuel rod design. The fuel design including use of pre-pressurized rods, in combination with plant operation and protection systems, will minimize clad failures due to potential UO₂ clad interactions during power transients.

The quality control discussion of the fuel manufacturing notes how statistical quality control is used.

TABLE A.2-2QUALIFICATION AND EXPERIENCE REQUIREMENTS OF
DUQUESNE LIGHT COMPANY QUALITY ASSURANCE PERSONNEL

<u>Title</u>	<u>Minimum Required Degree (*)</u>	<u>Minimum Years Experience</u>	<u>Experience</u>
Quality Assurance Manager	BS	10 In electric generation transmission or engineering	At least 10 years experience in elec- tric generation, transmission or engineering
Director, Quality Assurance and Director of Oper- ations Quality Control	BS	7	At least 7 years of experience in electric generation plant engineering & and construction, operations, mainte- nance, or testing
Supervisor Quality Assurance	BS	5	At least 5 years of experience in elec- tric generation, plant engineering & construction, oper- ations, mainten- ance, or testing including one year of experience in Quality Assurance.
Senior Quality Assurance Specialist	BS	3	At least 3 years of experience in elec- tric generation, plant engineering and construction, operations, mainte- nance, testing or Quality Assurance.
Coordinator - Quality Assurance NDT	BS	5	At least 5 years of experience as a NDT Level I in radio- graphy ultrasonics, magnetic particle and liquid pene- trant inspection.

Note:

- * Equivalent qualifications in related physical science or 2 years of experience in the design, construction, or operation of a power plant per year of college education.

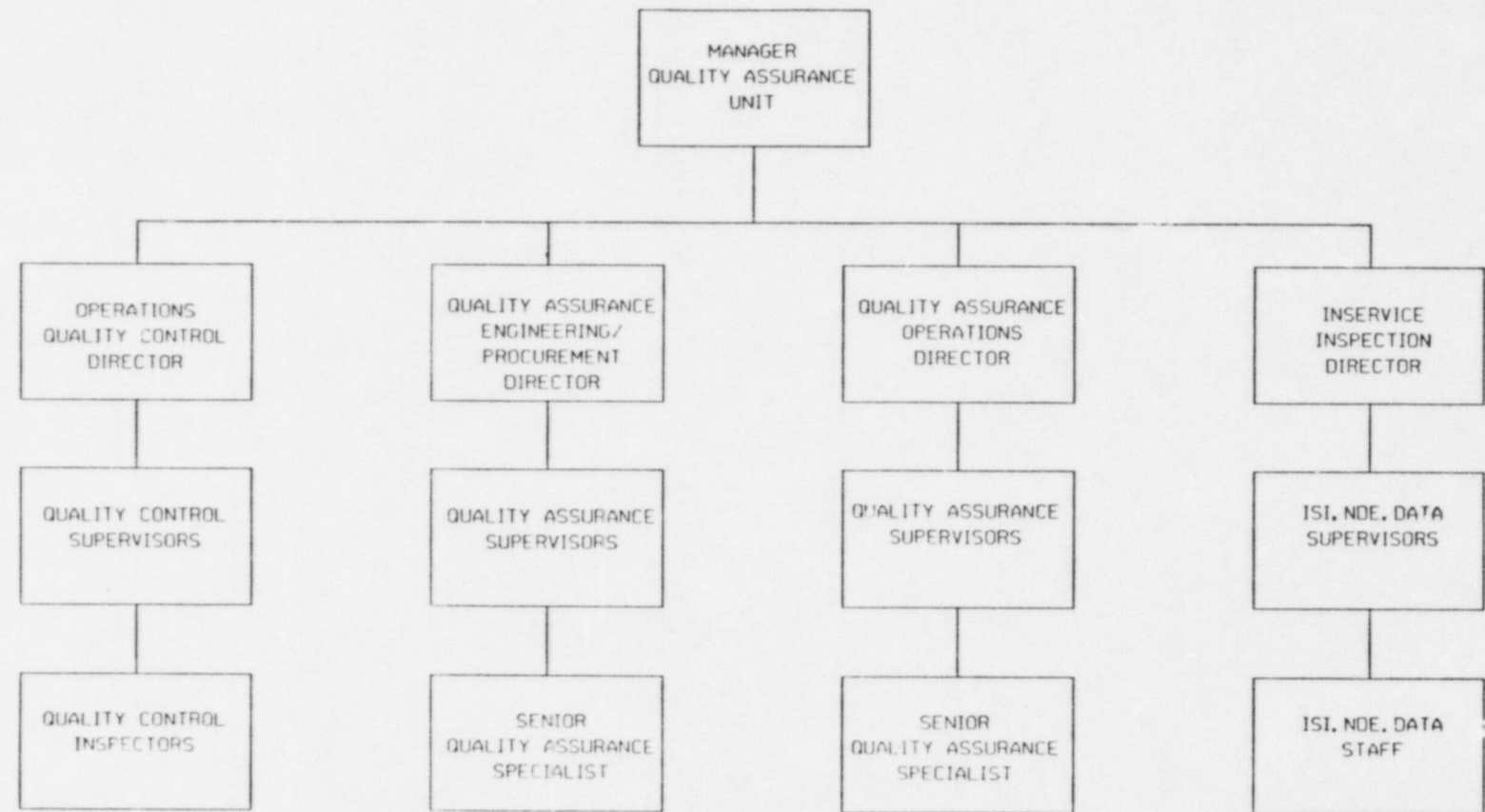


FIGURE A.2-4
DUQUESNE LIGHT COMPANY
QUALITY ASSURANCE UNIT -
OPERATIONS PHASE
BEAVER VALLEY POWER STATION UNIT NO. 1
UPDATED FINAL SAFETY ANALYSIS REPORT

PRE
CHIEF EXEC

NUCLEAR GROUP
VICE PRESIDENT

NUCLEAR ENGINEERING
AND CONSTRUCTION UNIT
GENERAL MANAGER

NUCLEAR OPERATIONS UNIT
GENERAL MANAGER

NUCLEAR SERVICES UNIT
GENERAL MANAGER

NUCLEAR
ENGINEERING
MANAGER

PLANT
MANAGER

BUDGET & FUEL
CONTRACTS
DIRECTOR

NUCLEAR
CONSTRUCTION
MANAGER

TECHNICAL SERVICES
MANAGER

RADIOLOGICAL CONTROL
MANAGER

MANAGEMENT SERVICES
MANAGER

PLANNING AND OUTAGE
MANAGEMENT
DIRECTOR

ADMINISTRATIVE SERVICES
MANAGER

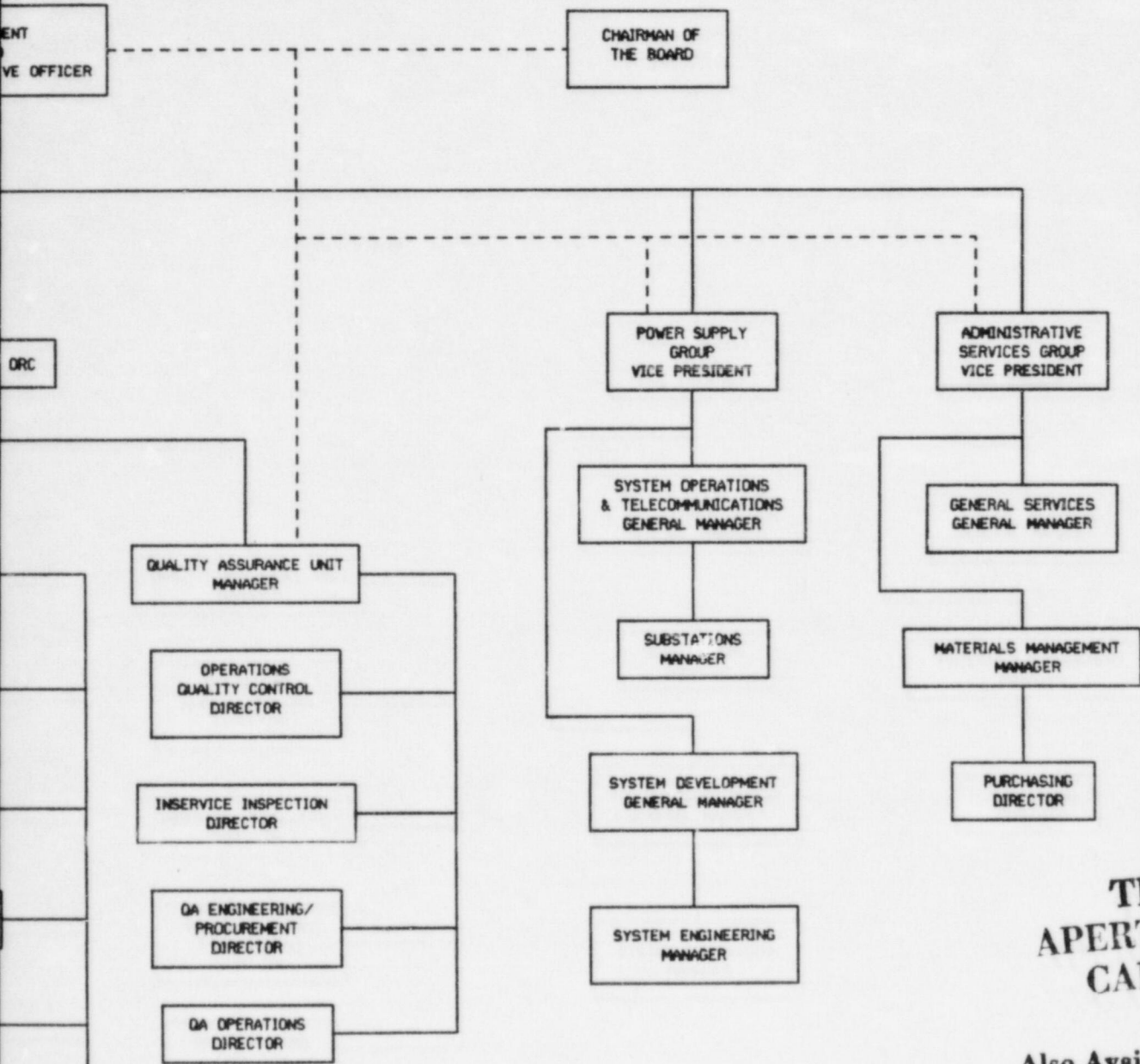
ENGINEERING INFORMATION
SERVICES
MANAGER

SHOPPINGPORT
DECONTAMINATION AND
DECOMMISSIONING
REPRESENTATIVE

NUCLEAR SAFETY
MANAGER

NUCLEAR TRAINING
MANAGER

— LINES OF RESPONSIBILITY
- - - INDICATES QA MANAGERS
AUTHORITY TO REPORT
QUALITY MATTERS TO
ANY LEVEL NECESSARY



**TI
APERTURE
CARD**

Also Available On
Aperture Card

FIGURE A.2-3
DUQUESNE LIGHT COMPANY
QUALITY ASSURANCE ORGANIZATION
OPERATIONS PHASE
BEAVER VALLEY POWER STATION UNIT NO. 1
UPDATED FINAL SAFETY ANALYSIS REPORT

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