



Carolina Power & Light Company  
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SERIAL: NL&RAS-94-118

MAR 06 1995

William S. Orser  
Executive Vice President  
Nuclear Generation  
10CFR50.90  
50.54(a)

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
PERFORMANCE BASED NUCLEAR ASSESSMENT PROGRAM - SUPPLEMENT TO  
REQUEST FOR LICENSE AMENDMENT AND QUALITY ASSURANCE PROGRAM  
CHANGES, RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

- References: 1) Letter dated July 22, 1994, from William S. Orser (CP&L) to USNRC  
(Serial NL&RAS-94-060)  
2) Letter dated July 22, 1994, from William S. Orser (CP&L) to USNRC  
(Serial NL&RAS-94-059)

Gentlemen:

The purpose of this letter is to respond to questions on the referenced letters which included 1) a request for license amendment, and 2) Quality Assurance (QA) program changes to implement a performance based nuclear assessment program. These questions were provided to Carolina Power & Light (CP&L) Company during a conference call with the NRC on November 3, 1994.

The following enclosures are included with this letter.

Enclosure 1: Response to Request for Additional Information.

Enclosure 2: Revised proposed changes to the QA program. Revisions from the July 22, 1994 submittal are highlighted. These revisions reflect the responses to the questions in Enclosure 1. There are two additional changes: Section 17.3.3.2 changes the Nuclear Services Department title to the Nuclear Services and Environmental Support Department to reflect a recent organizational realignment, and Radiation Protection was added to the list of assessments performed by the plant Nuclear Assessment Section (NAS). These changes are not considered reductions of the commitments in the Quality Assurance Program previously accepted by the NRC.

Enclosure 3 and 4: A complete set of typed Technical Specification (TS) pages showing the proposed changes. In TS Section 6.5.5.2, Radiation Protection was added to the list of assessments performed by the Nuclear Assessment Section (NAS), and TS Section 6.5.4.4 was reworded for clarification. These changes do not affect the conclusions of the previously submitted 10 CFR 50.92 evaluation.

Please refer any questions regarding this submittal to Mr. Bob Rogan at (919) 546-6901.

Sincerely,

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Enclosures

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c: Mr. Dayne H. Brown, (NC)  
Mr. S. D. Ebnetter, Regional Administrator, USNRC Region II  
Mr. D. C. Trimble, Jr., USNRC (NRR) Project Manager-Brunswick Units 1 and 2  
Ms. B. L. Mozafari, USNRC (NRR) Project Manager - HBRSEP  
Mr. C. A. Patterson, Brunswick USNRC Senior Resident Inspector  
The Honorable H. Wells, Chairman - North Carolina Utilities Commission

W. S. Orser, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge of belief; and the sources of his information are officers, employees and agents of Carolina Power & Light Company.

  
Notary (Seal)

My Commission expires: *June 29, 1999*

ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
NRC DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
REQUEST FOR LICENSE AMENDMENT

**PERFORMANCE BASED NUCLEAR ASSESSMENT PROGRAM**

RESPONSES TO REQUEST FOR ADDITIONAL INFORMATION CONCERNING  
PROPOSED CHANGES TO THE TECHNICAL SPECIFICATIONS AND QUALITY  
ASSURANCE PROGRAM TO INCORPORATE A PERFORMANCE BASED NUCLEAR  
ASSESSMENT PROGRAM.

#### QUESTION 1a

How will CP&L assure that the independence of employees is not compromised with the planned rotational assignments into the Nuclear Assessment Section (NAS)?

#### RESPONSE

This issue of independence of employees in rotational assignments will not be significantly different with the proposed Quality Assurance program than with the implementation of our current Quality Assurance program. The Site Vice President is responsible for ensuring an environment exists for a strong self-assessment program. He is also responsible for ensuring that personnel are assigned from line and other organizations on a rotational basis to the NAS organization. The rotation of personnel will help ensure that the engineering, operations, and maintenance expertise of the NAS organization stays current. The Site Vice President will approve all rotational assignments into and out of the NAS. The corporate Performance Evaluation Section (PES) will perform an assessment of the NAS at least once every 24 months. This assessment will focus on the effectiveness of NAS, will include an evaluation to assure that the NAS is functioning as an independent organization, and will determine the effectiveness and independence of NAS employees in rotational assignments. The PES reports offsite, independent of the plant organization, to the Vice President - Nuclear Services and Environmental Support Department.

The intent of the NAS rotational assignments is that an employee occupy a position in the NAS for approximately two years to five years.

See the proposed revision to FSAR Section 17.3.3 of the Quality Assurance program.

#### QUESTION 1b.

With regard to Regulatory Guide 1.146 CP&L is taking exception to ANSI N45.2.23 to allow qualification of lead auditors without requiring them to participate in five audits/assessments within a three year period.

Taking a blanket exception to this standard is unacceptable to the NRC and should be used only in special circumstances.

#### RESPONSE

The insert to FSAR page 1.8-33 of the previous submittal was revised as follows:

#### Insert for Regulatory Guide 1.146

ANSI N45.2.23, paragraph 2.3.4 states, "The prospective lead auditor/assessor shall have participated in a minimum of five (5) quality assurance audits within a period of time not to exceed three (3) years prior to the date of qualification, one audit of which shall be a nuclear quality assurance audit within the year prior to qualification."

CP&L will comply with this paragraph except in special cases where the prospective lead auditor/assessor has extensive auditing type experience (has participated as a lead auditor/assessor in two or more audits/assessments or as a team member in five or more audits/assessments or similar type experience, (e.g., INPO evaluations)), but more than three years has elapsed since this experience was acquired. In these cases, CP&L will ensure that the prospective lead auditor/assessor has maintained current experience in the nuclear field and they will participate in at least one audit/assessment as a lead auditor/assessor trainee in the year prior to his qualification. In addition, the lead auditor/assessor examination for these individuals will be focused to ensure a thorough understanding of the audit/assessment process and the responsibilities of a lead auditor/assessor. This exception will be documented in the lead auditor's/assessor's qualification file.



## QUESTION 2

How will the proposed nuclear assessment organization share information across site boundaries?

## RESPONSE

The Nuclear Assessment Sections will hold periodic, but not less frequently than semi-annual (+25% for scheduling flexibility), peer review meetings at both the Section Manager and the Unit Manager level for the purpose of exchange of information among sites. The Unit Managers' and Section Managers' meetings will allow the use of a designated alternate to attend these meetings. The PES Manager will participate as a member of the Section Managers' peer group meeting. The Independent Review Engineers will also meet periodically, but not less frequently than semi-annually (+25% for scheduling flexibility), for the purpose of exchange of information among sites.

The proposed revision to the FSAR Sections 17.3.3.1 and 17.3.3.2 were revised to include these requirements.

### QUESTION 3

The Quality Assurance Program needs to describe the oversight role of the Performance Evaluation Section of the plant nuclear assessment organizations.

### RESPONSE

Revised FSAR Section 17.3.3.2 of the Quality Assurance program describes the functions of the Performance Evaluation Section.

#### Nuclear Services and Environmental Support Department

The Performance Evaluation Section, in the Nuclear Services and Environmental Support Department, shall monitor specific functional areas, along with the line organization management, to determine that the desired levels of performance are being achieved. Individuals assigned these duties shall work with each nuclear plant to improve implementation of CP&L's Nuclear Generation Group programs and processes to support safe and reliable operation.

The primary functions of the PES are to: 1) independently assess the self-assessment and corrective action implementation process of the line organizations, and assess the NAS; 2) ensure that "lessons learned" are shared among the plants and support organizations; and 3) facilitate the use of industry peer evaluators to identify industry best practices.

A PES-led self-assessment shall be performed in each major functional area (maintenance, operations, engineering, E&RC and plant support) once every 24 months. The PES evaluation teams may include peers from other CP&L plants and from the nuclear utility industry, as appropriate, to lend expertise to the self-assessment.

The PES will by procedure, evaluate: 1) the effectiveness of the site's self-assessment program, 2) the site's ability to incorporate lessons learned from within CP&L, as well as industry events, and 3) the site's corrective action implementation program. To facilitate exchange of information between PES and the site Nuclear Assessment Section, periodic peer group meetings will be held, but not less frequently than semi-annually (+25% for scheduling flexibility), between the PES Manager and the NAS Section Managers from each site.

The PES shall provide oversight of each plant's NAS by reviewing NAS assessment reports and by performing a NAS effectiveness assessment at least once every 24 months.

Written PES evaluations, including the results and recommended corrective actions, will be reported to plant and senior management.

#### QUESTION 4

Define "periodic as it relates" to senior management briefings.

#### RESPONSE

The proposed revision to FSAR Section 17.3.1.3 of the Quality Assurance program has been revised to state:

On an approximately quarterly basis, a periodic briefing of NAS activities, along with any potential issues and recommendations, shall be presented to the Executive Vice President - Nuclear Generation Group.



#### QUESTION 5

Clarify the words "assessors generally have no direct responsibilities in the area being assessed."

#### RESPONSE

The proposed revision to FSAR Section 17.3.3.3 has been revised to state:

Personnel performing independent assessment activities are generally assigned to the NAS from the line and other organizations on a rotational basis for approximately two to five year assignments. Since these personnel are full-time assessors during this time period, they have no direct responsibilities in the areas being assessed. However, on an exception basis, personnel in the NAS may provide assistance to the line organization by participating in emergency preparedness activities, ad hoc committees, or analyzing technical issues, if such assistance is deemed to be in the overall best interest of safety and is approved in advance by NAS management. In addition, peer assessors from the line organizations may be utilized to add specific technical expertise to the assessment team. In these cases, the peer assessors will work under the direction of the assessment team leader and will not be assessing any functions associated with their normal job assignment.

## QUESTION 6

The proposed change to BNP Technical Specification 6.5.4.2.1, i.e., "other appropriate fields" did not provide any basis for the change.

Submit change description and basis made to BNP Technical Specification "6.5.4.2.1."

## RESPONSE

Change:

The words "associated with the unique characteristics of the nuclear power plant" have been deleted from BNP Technical Specification "6.5.4.2.1."

## BASIS:

The words "associated with the unique characteristics of the nuclear power plant" have been deleted to provide consistency among CP&L nuclear facilities. The deletion of these words does not reduce the level of review performed by Independent Reviewers in that other appropriate fields will continue to be reviewed based on managements decision to have these items independently reviewed. This modifying phrase did not provide any meaningful information to this item.

The proposed change does not affect the conclusions of the previously submitted 10 CFR 50.92 evaluation.

## QUESTION 7

The Technical Specification deletion of "outside agency fire protection audit" is not acceptable.

## RESPONSE

Carolina Power & Light Company withdraws the proposed deletion of Technical Specification (TS) 6.5.6.

The proposed performance based requirement for a fire protection assessment identified in the proposed Technical Specification 6.5.5.1.f and the proposed Quality Assurance Program FSAR Section 17.3.3.3 (sixth item of the first paragraph) in the previous submittal replaced the Outside Agency Audit. With the withdrawal of the proposed deletion of Technical Specification 6.5.6, the proposed requirements of Technical Specification 6.5.5.1.f and Quality Assurance Program FSAR Section 17.3.3.3 (sixth item of the first paragraph) have been deleted.

The withdrawal of the proposed deletion of Technical Specification 6.5.6 does not affect the conclusions of the previously submitted 10 CFR 50.92 evaluation.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
NRC DOCKET NOS. 50-325 AND 50-324/LICENSE NOS. DPR-71 AND DPR-62  
REQUEST FOR LICENSE AMENDMENT

**PERFORMANCE BASED NUCLEAR ASSESSMENT PROGRAM**

REVISED PROPOSED CHANGES TO THE QUALITY ASSURANCE PROGRAM

### 17.3 BNP Quality Assurance Program Description

#### 17.3.1 Management

17.3.1.1 Methodology. It is the policy of Carolina Power & Light (CP&L) Company to operate and maintain nuclear power plants without jeopardy to its employees or to the public health and safety.

This Quality Assurance (QA) Program and revisions are approved by the Executive Vice President - Nuclear Generation Group.

The QA Program and procedures apply to activities affecting quality. (e.g., operation, maintenance, modification, and refueling.) This program applies to individuals and organizations responsible for operating and supporting the nuclear plants. The program and procedures define responsibilities and authorities, prescribe measures for the control and accomplishment of activities for the operation of safety related, fire protection and radwaste structures, systems, and components and requires appropriate verification of conformance to established requirements. A list or system identifying items and activities to which this program applies is maintained at each nuclear plant or work location. Controls and responsibilities for maintaining this list or system are prescribed in procedures.

This QA Program and implementing procedures shall be used and updated as necessary to assure that the Company's nuclear generating units are managed such that they will be operated and maintained in a safe manner.

Deviations from this program shall be permitted only upon written authority from the Executive Vice President - Nuclear Generation Group.

The QA Program is founded on the principle that the line organization has the primary responsibility for quality and safety. Self-assessment practices are used to ensure the desired levels of quality and safety are achieved and maintained. This consists of each individual being involved with plant performance to ensure the plant is operated in a safe, reliable, and efficient manner. The Nuclear Assessment Section (NAS) evaluates the performance and effectiveness of plant programs, processes, personnel, and the line organization's self-assessment. These activities are to detect deficiencies in the desired levels of performance and quality, reporting these conditions to the Vice President - Brunswick Nuclear Plant, and ensuring adequate action is taken to correct and eliminate these conditions.

17.3.1.2 Organization. The CP&L organization responsible for the safe plant operation is described in Section 13.1 of the UFSAR and in implementing procedures. The term "line organization" used in this program refers to the production organization reporting to the Executive Vice President - Nuclear Generation Group.

Procurement documents require suppliers to operate in accordance with QA programs which are compatible with the applicable requirements of the CP&L's QA Program and procedures where their services are utilized in support of plant activities.



17.3.1.3 Responsibility. The primary responsibility for quality performance, including the identification and effective correction of problems potentially affecting the safe and reliable operation of the Company's nuclear facilities, resides with the line organization.

The managers of functions involving nuclear fuel, engineering, and operations shall assure that their personnel are adequately trained for their jobs and they have the experience and education required to carry out their assigned responsibilities. These managers shall ensure that adequate resources and procedures are available for correctly implementing the work activities to support this program.

Independent inspections are conducted to verify specific critical quality attributes. Individuals performing these inspections have access to necessary information to ensure that activities and equipment meet established acceptance criteria.

The NAS shall independently monitor and assess the Company's nuclear programs on a continuing basis. The NAS performs assessments which incorporate the previous "QA audits". These evaluations are performance based with emphasis on quality of the end product.

On an approximately quarterly basis, a periodic briefing of NAS activities, along with any potential issues and recommendations, shall be presented to the Executive Vice President - Nuclear Generation Group. The Manager - NAS shall have access to the corporate management up to and including the Executive Vice President - Nuclear Generation Group to resolve any quality or nuclear safety related concerns if the concerns cannot be resolved satisfactorily at a lower management level.

The Performance Evaluation Section is responsible to ensure that the results and effectiveness of the assessment organization and processes in accomplishing its assigned objectives will be regularly evaluated, but at a frequency not to exceed 24 months.

17.3.1.4 Authority. The program and procedures require that the authority and duties of persons and organizations performing activities affecting quality functions be clearly established and delineated in writing and that these individuals and organizations have sufficient authority and organizational freedom to:

1. Identify quality, nuclear safety, and performance problems.
2. Order unsatisfactory work to be stopped and control further processing, delivery, or installation of nonconforming material.
3. Initiate, recommend, or provide solutions for conditions adverse to quality.
4. Verify implementation of solutions.

17.3.1.5 Personnel Training and Qualification. Both on-site and off-site personnel within the CP&L organization and contract personnel, who perform activities affecting quality (implement elements of the QA Program) shall be indoctrinated and trained such that they are knowledgeable and capable of performing their assigned tasks.

Training programs and reviews ensure that proficiency of personnel performing activities affecting quality is achieved and maintained by training (formal & on-the-job training), examining, and/or certifying, as appropriate.

Personnel training and qualification records are to be maintained in accordance with plant procedures.

Personnel within the Operating organization performing duties of a licensed operator are indoctrinated, trained, and qualified as required by 10CFR55.

17.3.1.6 Corrective Action. The primary goal of the CP&L corrective action program is to improve overall plant operations and performance by identifying and correcting root causes of equipment and human performance problems. Part of this effort is directed toward encouraging individuals to voluntarily report events, near misses, and potential problems. It is the policy of CP&L to seek improvement in each nuclear plant's performance as well as in the performance of supporting Departments.

Management will emphasize to all levels in the organization the importance of identifying and effectively correcting situations that can adversely affect human and equipment performance. An important aspect of this program is the assignment of qualified personnel to accurately evaluate equipment/human performance problems, implement appropriate corrective actions, and verify corrective action adequacy.

Management is responsible for fostering a positive environment that encourages the self-identification of adverse conditions and trends.

The program requires that an evaluation of adverse conditions such as conditions adverse to quality, nonconformances, failures, malfunctions, deficiencies, deviations, and defective material and equipment is conducted to determine need for corrective action.

Conditions adverse to quality are identified through inspections, assessments, tests, checks, and review of documents.

The program requires corrective action to be initiated to preclude recurrence of significant conditions adverse to quality.

Procedures require follow-up reviews, verifications, inspections, etc., to be conducted to verify proper implementation of corrective action and to close out the corrective action documentation.

The program outlines the methodology for resolution of disputes involving quality and nuclear safety issues arising from a difference of opinion between identifying personnel and other groups.

Significant conditions adverse to quality are reported to appropriate management for review and evaluation.

Periodic review and evaluation of adverse trends are performed by management.

17.3.1.7 Regulatory Commitments. The operation of nuclear plants shall be accomplished in accordance with the U.S. Nuclear Regulatory Commission (NRC) Regulations specified in Title 10 of the U.S. Code of Federal Regulations.

The operation of the Company's nuclear power plants shall be in accordance with the terms and conditions of the facility operating license issued by the NRC.

The program and procedures are designed to ensure compliance with the NRC Regulatory Guides and ANSI Standards applicable to the operations phase and to which BNP is committed. The commitment to comply or exceptions for CP&L to follow are presented in Section 1.8 in this UFSAR. The requirements of this section (17.3) may provide additional exceptions to these regulatory guides and codes and standards.

The Nuclear Regulatory Commission shall be notified of changes to the QA Program description in accordance with 10 CFR 50.54(a)(3).

### 17.3.2 Performance/Verification

17.3.2.1 Methodology. Personnel performing work activities are responsible for achieving the acceptable level of quality.

Personnel performing verification activities are responsible for verifying the achievement of acceptable quality.

Work is accomplished and verified using instructions, procedures, or appropriate means that are of a detail commensurate with the activity's complexity and importance to safety.

Criteria that define acceptable quality are specified in procedures and/or other documents, and verification, when required is performed against these criteria.

17.3.2.2 Design Control. Procedures define requirements for the control of design activities associated with modifications of items that are safety-related.

Design changes are subject to appropriate controls which were applicable to the original design. CP&L may designate an organization to make design changes other than the organization which prepared the original design. In any case, CP&L will assure that the organization has access to pertinent background information, including an adequate understanding of the requirements and intent of the original design, and that the organization has demonstrated competence in applicable design areas.

Measures shall be taken to assure that the design selected to accomplish a necessary or desirable change does not create "new" problems in off-normal modes of operation or in adjacent inter-tied systems.

Design changes made to the plant are accomplished in a planned and controlled manner in accordance with written, approved procedures. These procedures include provisions, as necessary, to ensure that:

1. Design documents (such as specifications, drawings, procedures and instructions) reflect applicable regulatory, performance, quality, and quality verification requirements and design bases. These documents are checked for accuracy and completeness by qualified individuals and reviewed to assure that documents are prepared in accordance with procedures.

2. There is adequate review of the suitability of materials, parts, equipment, and processes which are essential to the safety-related functions of structures, systems, and components.

3. Materials, parts, and equipment which are commercial grade items or which have been previously approved for a different application are evaluated for suitability prior to selection.

4. Design documents and procedures are controlled to reflect design modifications and "as-built" conditions.

5. Internal and external design interfaces between organizations participating in modification activities are adequately defined and controlled, including the review, approval, release, and distribution of design documents and revisions.

The above controls are applied as necessary to such aspects of design as reactor physics; seismic, stress, thermal, hydraulic, radiation, and accident analyses; compatibility of materials; and accessibility for inservice inspection, maintenance, and repair.

Any errors or deficiencies found in the design process or the design itself are documented and corrected, as outlined in the applicable Department's corrective action program procedures.

Following completion of the design change/modification, controlled design change information is made available to affected personnel.

Training, on design changes/modifications that affect the operation of the plant, is provided to affected plant operating personnel.

17.3.2.3 Design Verification. Procedures require that the adequacy of design changes be verified by the performance of design reviews, alternate calculations, or qualification testing. The control measures specified in the plan for control of design verification activities are as follows:

1. Personnel responsible for design verification do not include the original designer or the designer's immediate supervisor unless the immediate supervisor is the only one capable of verifying the design.

2. Procedures identify the positions or organizations responsible for design verification and define their authority and responsibility. Procedures also provide guidelines as to the method of design verification to be used. Unless otherwise specified, design verification is performed by the method of independent design reviews and includes verification that Safety Analysis Report (UFSAR) commitments have been addressed.

3. Qualification tests to verify the adequacy of the design are performed using the most adverse specified design conditions.



4. Design changes are reviewed to assure that design parameters are defined and that inspection and test criteria are identified.

5. Design verification is completed prior to relying upon the component, system or structure to perform its function.

17.3.2.4 Procurement Control. Carolina Power & Light Company maintains a program for supplier evaluation, results of supplier evaluation, surveillance of suppliers, supplier furnished records, certificates of conformance, effectiveness of supplier quality control, and the purchase of spare or replacement parts.

Procedures define requirements for the control of procurement documents and ensure that purchased material and services are of acceptable quality.

Potential contractors and suppliers are evaluated by Vendor and Equipment Quality Unit personnel prior to award of a procurement contract when needed to assure the contractor's or supplier's capability to comply with applicable technical and quality requirements.

Procurement documents, such as purchase specifications, contain or reference the following:

1. Technical, administrative, regulatory, and reporting requirements, including material and component identification requirements, drawings, specifications, codes and industrial standards, test and inspection requirements, and special process instructions.

2. Identification of the documentation to be prepared, maintained, or submitted (as applicable) to CP&L for review and approval. These documents may include, as necessary, inspection and test records, qualification records, or code required documentation.

3. Identification of those records to be retained, controlled, and maintained by the supplier, and those delivered to the purchaser prior to use or installation of the hardware.

Receipt inspections are performed by qualified inspectors in accordance with procedures to assure that:

1. Materials, equipment, or components are properly identified and correspond with associated documentation.

2. Inspection records or certificates of conformance attesting to the acceptance of materials, equipment, and components are completed and are available prior to installation or use.

3. Materials, equipment, and components are inspected and judged acceptable in accordance with predetermined inspection instructions prior to installation or use.

4. Items not meeting applicable requirements are identified and controlled until proper disposition is made.



Appropriate controls and provisions have been included in procurement procedures for selection, determination of suitability for the intended use, evaluation, receipt, and quality evaluation of commercial grade items to ensure that these items will perform satisfactorily in service.

17.3.2.5 Procurement Verification. CP&L procurement documents are prepared, reviewed, approved, and controlled in accordance with procedures to assure that requirements are correctly stated, inspectable, verifiable, and controllable, and there are adequate acceptance/rejection criteria. Procurement documents are reviewed by personnel knowledgeable in applicable technical and quality requirements, and documentary evidence of that review and approval is retained and available for verification.

17.3.2.6 Identification and Control of Items. Procedures require spare or replacement parts to be subject to QA program controls, codes and standards, and technical requirements which ensure they are suitable for their intended service.

Items accepted or released are identified as to their inspection status prior to forwarding them to a controlled storage area or releasing them for installation or further work. (Bulk items will not require individual accept tags; however, status of unacceptable bulk items will be so indicated).

Procedures require that materials, parts, and components be identified and controlled to prevent the use of incorrect or defective items. These procedures also require that identification of items be maintained either on the item in a manner that does not affect the function or quality of the item, or on records traceable to the item.

Procedures implementing these requirements provide for the following:

1. Verification that items received at the plant are properly identified and can be traced to the appropriate documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, nonconformance reports, or material test reports.
2. Verification of item identification consistent with the CP&L inventory control system and traceable to documentation which identifies the proper uses or applications of the item.

Consumables utilized in safety-related structures, systems and components are subject to appropriate controls as described in procedures.

17.3.2.7 Handling, Storage, and Shipping. Procedures define requirements for the control of the handling, storage, and shipping of safety-related items. These procedures require measures to be taken to ensure special handling, storage, cleaning, packaging, shipping, and preservation requirements are established to control these activities in accordance with design and specification requirements to preclude damage, loss or deterioration by environmental conditions such as temperature or humidity.

Provisions are established to control the shelf life and storage of chemicals, reagents, lubricants, and other consumable materials.

17.3.2.8 Test Control. Procedures define requirements for test programs when required and require that items be tested to demonstrate that they will perform satisfactorily in service.

Modifications, repairs, and replacements are accomplished in accordance with the original design and testing requirements or acceptable alternatives.

Test procedures incorporate or reference the following, as required:

1. Instructions and prerequisites for performing the test.
2. Use of proper test equipment.
3. Mandatory inspection hold points.
4. Acceptance criteria

Test results are documented, evaluated, and their acceptability determined by a qualified, responsible individual or group.

When the acceptance criteria is not met, affected areas are to be retested or evaluated, as appropriate.

17.3.2.9 Measuring and Test Equipment Control. Procedures define requirements for the control of measuring and test equipment used. These procedures include requirements to establish procedures for the calibration technique and frequency, maintenance, and control of measuring and test equipment.

Inspections and test devices are selected to assure accurate measurement (i.e., to overcome inherent inaccuracies associated with environment, human error, equipment, etc.).

Measuring and test equipment (M&TE) is identified and traceable to the calibration test data.

Measuring and test instruments are calibrated at specified intervals (or immediately before and after use) based upon one or more of the following:

1. Technical Specifications.
2. Required accuracy.
3. Intended use.
4. Frequency of usage.
5. Stability characteristics.
6. Other conditions affecting measurement.
7. Manufacturer's recommendations.

Status of calibration for measuring and test equipment is provided through the use of tags, stickers, labels, routing cards, computer programs, or other suitable means. The status indicators indicate the date recalibration is due or the frequency of recalibration.

Portable measuring and test equipment are calibrated by standards at least four times as accurate as the portable measuring and test equipment, unless limited by the state of the art.

Special tools such as torque wrenches, calipers, and micrometers are calibrated to be at least as accurate as the application(s) for which it is used, using standards which are at least as accurate as the special tool being calibrated.

Installed measuring and test instruments are calibrated by instruments at least as accurate as the installed, unless limited by the state of the art.

Reference and transfer standards are traceable to nationally recognized standards; or where national standards do not exist, provisions are established to document the basis for the calibration.

Measures are required to be taken and documented to determine the validity of previous inspections and test results, if the measuring and test equipment is found to be out of calibration.

17.3.2.10 Inspection, Test, and Operating Status. Procedures define requirements for the identification and control of the inspection, test, and operating status of safety-related structures, systems, and components.

These procedures include the application, removal, and verification of inspection and welding stamps, or other status indicators as appropriate.

Measures are established for indicating the operating status of structures, systems, and components. These measures include the use of checklists, computer programs, logs, stickers, tags, labels, record cards, and test records to indicate the acceptable operating status of installed equipment. Installed equipment which, if operated, could cause damage to other equipment/systems or to personnel is tagged to indicate its non-operational status and to prevent inadvertent use.

Selected plant procedures and subsequent revisions receive separate technical review to ensure required inspections, tests, and other critical operations are included.

Altering the sequence of required tests, inspections, and safety-related operations can only be accomplished by methods outlined in procedures.

17.3.2.11 Special Process Control. Procedures define requirements for the control of special processes, such as welding, heat treating, and nondestructive examination.

Procedures require that special processes be performed by qualified personnel using proper equipment and in accordance with written qualified procedures. These personnel and procedures are to be qualified in accordance with applicable codes, standards, and specifications as described in procedures. Qualification records of special process procedures and personnel performing special processes are maintained and available for verification.

17.3.2.12 Inspection. Procedures define requirements for an inspection program to verify conformance to performance and quality requirements specified for those activities and services.

Inspections are performed by personnel who are not directly responsible for performing or supervising the activity being inspected. Inspection personnel are qualified in accordance with applicable codes and standards, and their qualifications and certifications are maintained current.

Inspections are performed in accordance with procedures or other documents which provide for the following:

1. Identification of individuals or groups responsible for performing the inspections.
2. Identification of characteristics and activities to be inspected.
3. Acceptance criteria.
4. Inspection techniques
5. Recording the results of the inspection, review of the results, and identification of the inspector.
6. Indirect control by monitoring of processing methods, equipment, and personnel when direct inspection is not possible.

Procedures identify inspection holdpoints, beyond which work may not proceed until inspected.

When acceptance criteria are not met, the condition will be documented in accordance with the applicable department's corrective action program procedures and reinspected or evaluated, as appropriate.

Modification, repairs, and replacements are inspected in accordance with the original design and inspection requirements or acceptable alternatives.

17.3.2.13 Corrective Action. The primary goal of the CP&L corrective action program is to improve overall plant operations and performance by identifying and correcting root causes of equipment and human performance problems.

Procedures define requirements for a corrective action program that charges personnel working at or supporting the nuclear plants with the responsibility to identify adverse conditions (including conditions adverse to quality).



Procedures include requirements for verification of the acceptability of the rework/repair of items by reinspection and/or testing in accordance with the original inspection or test requirements or by an accepted alternative inspection and testing method.

Conditions that require rework/repairs are identified through the use of maintenance work request forms.

17.3.2.14 Control of Documents. Procedures define requirements for the development, review, approval, issue, use, revision, and control of documents. These procedures define the scope of which documents are to be controlled.

Procedures require the identification of those individuals or organizations responsible for reviewing, approving, and issuing documents and revisions thereto.

Changes to documents are reviewed and approved by the same organization that performed the original review and approval or by other designated qualified responsible organizations.

Controlled documents are to be distributed to and used by the person performing the activity in accordance with plant procedures.

A document control system has been established to identify the current revision number of instructions, procedures, specifications, and drawings.

Superseded documents are controlled to prevent inadvertent use.

17.3.2.15 Records. The program requires that sufficient records be maintained to provide documentary evidence of the quality of items and the accomplishment of activities affecting quality.

Procedures define requirements for the identification, collection, and storage of quality assurance records.

Records are identifiable and retrievable through the use of indexes and filing systems, which are required by the program.

Procedures are required to be developed to indicate responsibilities and retention periods.

Records are maintained within structures designed to prevent destruction, deterioration, or theft. These facilities ensure protection against destruction by fire, flooding, theft, and deterioration by the environmental conditions of temperature and humidity.

### 17.3.3 Assessment

17.3.3.1 Methodology. The overall objective at CP&L is to encourage ownership, involvement, and dedication by each individual supporting the Nuclear Generation Group. This involves continually and aggressively looking for ways to improve the overall performance and safety at each plant. This approach of identifying and correcting conditions early, requires active support by management and employees.



A process of assessment is an attitude by personnel that the CP&L Nuclear Generation Group is improving on a continual basis. This process, along with an effective corrective action program, ensures that conditions are identified early, corrected promptly and effectively before becoming significant quality or safety problems.

Personnel responsible for carrying out the assessment functions, including safety committee activities, nuclear safety reviews, verifications, self-assessment and independent assessments, are cognizant of day-to-day activities, events, and have necessary experience to act in a management advisory function.

The Nuclear Assessment Sections will hold periodic, but not less frequently than semi-annual (+25% for scheduling flexibility), peer review meetings at both the Section Manager and the Unit Manager level for the purpose of exchange of information among sites. The Unit Managers' and Section Managers' meetings will allow the use of a designated alternate to attend these meetings. The PES Manager will participate as a member of the Section Managers' peer group meeting. The Independent Review Engineers will also meet periodically, but not less frequently than semi-annually (+25% for scheduling flexibility), for the purpose of exchange of information among sites.

Assessment activities are accomplished using processes or procedures of a detail needed to accomplish the function based on complexity and importance to safety.

The managers of functions that support the Nuclear Generation Group are responsible for ensuring that self-assessment activities and processes are implemented within their functions on a continuing basis.

17.3.3.2 Self-Assessment. It is the management expectation that individuals and organizations self-assess their end product. Adverse conditions identified during self-assessment activities are reported and resolved in accordance with the corrective action program.

Self-Assessment activities are not necessarily a documented activity and personnel performing self-assessment do not require any special training and/or qualifications beyond that required to hold their present position.

17.3.3.2.1 Line organization. Each individual, work group, and manager should be aware of areas that may need improvement.

Members of the line organization are charged with the responsibility to continually evaluate their activities and use each opportunity to achieve higher standards of quality and improved performance.

Self-assessment activities focus on how well the integrated quality assurance program is working and is to identify conditions that hinder the organization from achieving its safety, quality, and performance goals and standards.

17.3.3.2.2 Nuclear Services and Environmental Support Department. The Performance Evaluation Section, in the Nuclear Services and Environmental Support Department, shall monitor specific functional areas, along with the line organization management, to determine that the desired levels of

performance are being achieved. Individuals assigned these duties shall work with each nuclear plant to improve implementation of CP&L's Nuclear Generation Group programs and processes to support safe and reliable operation.

The primary functions of the PES are to: 1) independently assess the self-assessment and corrective action implementation process of the line organizations, and assess the NAS; 2) ensure that "lessons learned" are shared among the plants and support organizations; and 3) facilitate the use of industry peer evaluators to identify industry best practices.

A PES-led self-assessment shall be performed in each major functional area (maintenance, operations, engineering, E&RC and plant support) once every 24 months. The PES evaluation teams may include peers from other CP&L plants and from the nuclear utility industry, as appropriate, to lend expertise to the self-assessment.

The PES will by procedure, evaluate: 1) the effectiveness of the site's self-assessment program, 2) the site's ability to incorporate lessons learned from within CP&L, as well as industry events, and 3) the site's corrective action implementation program. To facilitate exchange of information among sites, PES and Nuclear Assessment Section, periodic peer group meetings will be held, not less than semi-annually (+25% for scheduling flexibility), among the PES Manager and the Nuclear Assessment Section Managers from each site.

The PES shall provide oversight of each plant's NAS by reviewing NAS assessment reports and by performing a NAS effectiveness assessment at least once every 24 months.

Written PES evaluations, including the results and recommended corrective actions, will be reported to plant and senior management.

17.3.3.3 Independent Assessment. The NAS is responsible for conducting independent assessments of functions and activities affecting the nuclear programs at CP&L.

17.3.3.3.1 Organization. Personnel performing independent assessment activities are generally assigned to the NAS from the line and other organizations on a rotational basis for two to five year assignments. Since these personnel are full-time assessors during this time period, they have no direct responsibilities in the areas being assessed. However, on an exception basis, personnel in the NAS may provide assistance to the line organization by participating in emergency preparedness activities, ad hoc committees or analyzing technical issues, if such assistance is deemed to be in the overall best interest of safety and is approved in advance by NAS management. In addition, peer assessors from the line organizations may be utilized to add specific technical expertise to the assessment team. In these cases, the peer assessors will work under the direction of the assessment team leader and will not be assessing any functions associated with their normal job assignment.

Selection of assessment personnel is based on experience and/or training that establishes that their qualifications are commensurate with the complexity or special nature of the area being assessed. The process for qualification of personnel to perform and lead assessments is established in procedures.

The Site Vice President is responsible for ensuring that an environment exists for a strong self-assessment program. He is also responsible for ensuring that personnel are assigned from line and other organizations on a rotational basis to the NAS organization. The Site Vice President will approve all rotational assignments into and out of the nuclear assessment organizations. The corporate Performance Evaluation Section will perform an assessment of the Nuclear Assessment Section at least once per 24 months. This assessment will focus on the effectiveness of NAS, will include an evaluation to assure that the NAS is functioning as an independent organization, and will determine the effectiveness and independence of NAS employees in rotational assignments into and out of the NAS organization.

Personnel performing assessments shall have access to records, procedures, and personnel to gather data.

17.3.3.3.2 Assessment process. The independent assessment process includes gathering data, analyzing data, focusing on selected issues and identifying deficiencies to desired performance. The results of independent assessments are communicated to management in a manner that causes action to correct deficiencies and develop action to prevent recurrence. In addition, this process should evaluate corrective measures adopted to eliminate the deficiencies identified.

Data is gathered using performance based techniques during:

1. Observations of work activities (including line organization self-assessment activities),
2. Interviews,
3. Reviews of documents to gather information (including the use of NRC, INPO, and other agency evaluations),
4. Nuclear Safety Review activities,
5. Team independent assessments, and
6. Analysis of plant data and reports (including adverse condition reports, etc.).

Planning activities identify the organizations to be evaluated, the characteristics to be focused on during the independent assessment, and the applicable acceptance criteria. Independent Assessment activities are selected with flexibility based on various factors. These factors include but are not limited to: importance to safety and reliability, NAS independent assessments of site work activities, time since last assessment, plant management perspective, outside agency audits, and problem areas identified from industry and CP&L experience.

Preparation activities may include a review of performance data, relevant documentation, previous assessment data, industry experience, team member experience, and management input. These activities enable the team to focus on issues which may impact safety and reliability when analyzing data.

Assessments are scheduled on the basis of the status and safety importance of the activities or processes being performed. The schedule is flexible and dynamic to allow assessment to be changed depending on plant conditions, events, or issues raised by Senior management.

17.3.3.3.3 NAS Assessment Program. Assessments of facility activities shall be performed by the Nuclear Assessment Section. Assessments will be performance based and will be scheduled based on plant performance and importance to safety but at a frequency not to exceed twenty-four months. These assessments shall encompass:

1. The conformance of facility operation to provisions contained within the Technical Specifications and applicable license conditions.
2. The performance, training and qualifications of the entire facility staff.
3. The results of actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety.
4. The performance of activities required by the Operational Quality Assurance Program to meet the criteria of Appendix B, 10 CFR 50.
5. Any other area of facility operation considered appropriate by the Vice President - Brunswick Nuclear Plant.
6. The Radiological Environmental Monitoring Program and the results thereof.
7. The OFFSITE DOSE CALCULATION MANUAL and implementing procedures.
8. The PROCESS CONTROL PROGRAM and implementing procedures for processing and packaging of radioactive wastes.

Assessments of activities prescribed by the Code of Federal Regulations will be performed at the frequencies prescribed by the applicable regulation. These assessments shall encompass:

1. Emergency Preparedness (per 10 CFR 50.54(t))
2. Security (per 10 CFR 50.54(p))
3. Radiation Protection (per 10 CFR 20.1101c).

17.3.3.3.4 Results. Adverse conditions are reported in accordance with the applicable department's corrective action program procedure or by formal correspondence between responsible levels of management.

Independent assessment results are communicated to line management to allow for timely action to address potential problems or recognize strengths and superior performance.

Independent assessment results are documented and reviewed with management personnel responsible for the areas assessed.



Results of independent assessments, special investigations, and analysis of data will be provided to the NAS Management for review. A periodic briefing of NAS activities, along with potential issues and recommendations, shall be presented to the Senior Nuclear Operating Officer, the Executive Vice President - Nuclear Generation Group.

Follow-up is accomplished to assure that corrective action is taken as a result of the assessment and that deficient areas are reassessed, when necessary, to verify implementation of adequate corrective actions.



ENCLOSURE 3  
BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2  
NRC DOCKET NOS. 50-325 & 50-324/OPERATING LICENSE NOS. DPR-71 & DPR-62  
REQUEST FOR LICENSE AMENDMENT

**PERFORMANCE BASED NUCLEAR ASSESSMENT PROGRAM**

PAGE CHANGE INSTRUCTIONS

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PAGE CHANGE INSTRUCTIONS

UNIT 2

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