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ACCESSION NBR:9702180360 DOC.DATE: 97/02/12 NOTARIZED: NO DOCKET #
FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
50-251 Turkey Point Plant, Unit 4, Florida Power and Light C 05000251
AUTH.NAME AUTHOR AFFILIATION
PLUNKETT,T.F. Florida Power & Light Co.
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SUBJECT: Provides response to RAI to 10CFR5.54(f) re adequacy & availability of design basis info.

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10 CFR 50.4
10 CFR 50. 54 (f)

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

RE: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Request for Information Pursuant to
10 CFR 50.54(f) Regarding Adequacy and
Availability of Design Basis Information

The purpose of this letter is to provide the information requested from Florida Power and Light Company (FPL) in NRC letter, (J. M. Taylor to J. L. Broadhead) dated October 9, 1996. Your letter requested information that would provide the NRC with "added confidence" and reasonable assurance that our plants are being operated and maintained within their design bases and that any deviations identified are reconciled in a timely manner. FPL's response was requested within 120 days of receiving your letter, i.e., by February 13, 1997.

The current engineering design, configuration control, and corrective action processes are discussed in the Enclosure. These are active processes that are under continuous change and improvement based on operating experience, the corrective action program, and changing regulatory guidance or interpretations.

The enclosed information forms the basis for our conclusion that plant design bases requirements have been and will continue to be translated into operating, maintenance, and testing procedures. FPL also concludes that system, structure, component configuration, and performance are consistent with the plant design bases, and that Turkey Point has an adequate process for the identification and correction of identified deviations. The overall effectiveness of our current processes and programs provides reasonable assurance that the configuration of Turkey Point Units 3 and 4 is consistent with the plant design bases.

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The Enclosure contains new regulatory commitments which are located in the response to NRC request [f]. In summary, FPL is planning to perform a graded FSAR review over the next 2 years to further address the accuracy of information it contains. This review will commence following completion of the NEI review effort scheduled for April 1997.

The enclosed information is provided pursuant to the requirements of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). The required oath or affirmation affidavit executed by my Engineering Vice President, is attached.

Please contact us should you have any questions on the enclosed information.

Very truly yours,

T. F. Plunkett
President
Nuclear Division

TFP/JEK

Enclosure

cc: Director, Office of Nuclear Reactor Regulation, USNRC
Regional Administrator, Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

STATE OF FLORIDA)
) ss.
COUNTY OF PALM BEACH)

R. S. Kundalkar being first duly sworn, deposes and says:

That he is Vice President, Engineering, Nuclear Division, of Florida Power & Light Company, the Licensee herein;

That he has executed this document; that he has read the contents of the attached Enclosure and, in reliance on the processes discussed in the Enclosure and independent oversight of its accuracy, hereby affirms that the statements made in this document are true and correct to the best of his knowledge, information and belief; and that he is authorized to execute the document on behalf of said Licensee.

Ranjan S. Kundalkar
R. S. Kundalkar

STATE OF FLORIDA
COUNTY OF Palm Beach

Sworn to and subscribed before me

this 12 day of February, 1997
by R. S. Kundalkar, who is personally known to me.

Roberta S Economy
Name of Notary Public - State of Florida

ROBERTA S. ECONOMY
MY COMMISSION # CC283823 EXPIRES
June 1, 1997
BONDED THRU TROY FAIN INSURANCE, INC.

Print, type or stamp Commissioned Name of Notary Public

Response to NRC 10 CFR 50.54(f) Information Request

Adequacy and Availability of Design Bases Information

9702180360

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1.0 Introduction

By letter dated October 9, 1996, the Nuclear Regulatory Commission (NRC) requested information to provide the added confidence and assurance that the Florida Power and Light Company's (FPL) nuclear units, St. Lucie Units 1 and 2 and Turkey Point Units 3 and 4, are operated and maintained within the design bases and that any deviations are reconciled in a timely manner. The purpose of this enclosure is to provide the specific information requested by the NRC for Turkey Point Units 3 and 4. Although the engineering design and configuration control processes are similar for the St. Lucie and Turkey Point units, their licensing and design bases are different and certain activities associated with maintaining the design bases are plant specific. Therefore, the requested information for the St. Lucie units is provided in separate correspondence.

2.0 Response Preparation

Upon receipt of the October 9, 1996, request for information, a Management Oversight Committee was appointed to direct the preparation of the response to the NRC. Their first task was the appointment of a multi-discipline working committee to prepare the response. The committee was composed of personnel from Engineering, Operations, Maintenance, Quality Assurance, Process Control, Training, and Licensing. Turkey Point and St Lucie had teams of approximately the same composition. Initial planning for the response was completed by a combination of personnel from both sites. After the initial identification of the subject material needed, tasks were assigned to each member of the working group to write detailed responses to the requests and provide documentation to the working committee for compilation and verification for the draft report. The majority of the tasks involved the review of historical documents that describe processes and results of FSAR reviews and DBD development. Quality Assurance (QA) audits of those efforts, as well as the processes controlling configuration and design control, also were reviewed. The response was then finalized and a review process was conducted. This response was reviewed by knowledgeable management personnel with expertise in the areas discussed in the response.

As discussed above, extensive work has already been done in the area of FSAR reviews and DBD development. Continued updates of those documents and the processes controlling change at Turkey Point also have been put in place. An initiative suggested by Nuclear Energy Institute (NEI 96-05, "Guidelines for Assessing Programs for Maintaining the Licensing Basis,") to review the processes for translation of the licensing bases into the various plant documentation is under way.

3.0 Summary of Conclusions

FPL has reviewed previous audits, inspections, self-assessments and vertical slice review activities, current engineering design and configuration control processes, plant configuration and performance documentation, and problem identification/corrective action programs at Turkey Point. Based on these reviews, FPL concludes, with reasonable assurance, that the design bases for Turkey Point are adequate; that the design bases and as-built plant conditions have been

maintained consistent through effective engineering processes; and that the plant corrective action programs adequately identify and correct exceptions to this conclusion in a timely manner. Engineering processes and procedures ensure that the as-built plant is accurately reflected in the plant design bases and that plant changes do not erode or compromise safety margins of risk-significant systems. In-depth vertical slice reviews of actual design basis documentation and its use in plant modifications, procedures, and operation during the late 1980s and early 1990s provide an integrated positive conclusion about the engineering process effectiveness in maintaining the Turkey Point design bases.

FPL is committed to maintaining the integrity of the plant design as licensed, and to plant operations consistent with that license. As such, FPL has learned that the best way to demonstrate conformance with design bases, is through in-depth reviews, and timely correction of identified nonconformances or inconsistencies. Improved engineering processes result from findings of reviews of the plant structures, systems and components, and their associated operations, maintenance and testing procedures.

Previous practice which includes responsive actions to deficiencies, in addition to recently performed programs and evaluations, provide reasonable assurance that the Turkey Point design bases are adequate and that the plant is configured and operated in accordance with its design. Exceptions to this conclusion are addressed promptly once they have been identified. In addition, reviews are in process or will be initiated which will further assess the design documentation at Turkey Point and the programs and processes which control configuration of the facility in relation to its design bases. The details of these programs are further outlined herein.

4.0 Historical Background

The original Turkey Point Final Safety Analysis Report (FSAR) was submitted to the Atomic Energy Commission (AEC) in the late 1960s. Revisions to the FSAR were submitted throughout the licensing process and continued until after the original AEC Safety Evaluation was issued in March 1972, such that significant original licensing issues were resolved. Similarly, the FPL Topical Quality Assurance Report (TQAR) was originally submitted in the late 1970s, with revisions following periodically as prescribed by the regulations.

Subsequently, 10 CFR 50.71(e) was revised in 1980 to require the periodic update of the FSAR. As part of the update effort, FPL reviewed plant design changes and licensing correspondence for the intervening period from 1973 to 1980 to capture changes to the FSAR. The Updated FSAR (FSAR) was initially issued in July 1982, with subsequent updates occurring annually until 1992. Since 1992 the periodic updates have occurred within six months after each Unit 4 outage. These updates were performed primarily by an Architect Engineer (A/E) until 1991 when updating was taken over by FPL.

During the design and construction phase of Turkey Point, FPL performed project management functions, while the A/E performed the engineering and modification control functions, including original design and modifications. Following plant upgrades in response to NUREG 0737, a review of the engineering design process, along with the configuration management process, indicated that the interfaces between the A/E and the plant were not as robust as they were during

the construction phase and needed to be revised. This was confirmed by an NRC Safety System Functional Inspection (SSFI) of the Turkey Point Auxiliary Feedwater (AFW) system performed in 1985, where the NRC found violations of the configuration management process. FPL committed to a Performance Enhancement Program which revised many of the processes as described below.

In the early to mid-1980s, a number of events occurred which provided indications that control over the plant's design bases was not being maintained in a completely effective manner. In early 1984, several plant trips occurred that were attributed to design changes associated with the Auxiliary Power Upgrade Project. In mid-1985, the first NRC Safety System Functional Inspection (SSFI) noted numerous concerns with the design basis of the AFW system at Turkey Point. In late 1985 and early 1986, issues with Emergency Diesel Generator (EDG) Loading were reported by FPL. Significant corrective actions were initiated to correct this situation, including the implementation of the Emergency Power System (EPS) enhancement project. This project installed two additional emergency diesel generators and associated circuitry.

Based upon inspections in the early 1980s, the NRC reached the conclusion that FPL had not given sufficient management attention to ensuring adherence to regulatory requirements for surveillances, testing, maintenance and operating activities. FPL developed the Performance Enhancement Program (PEP) to address those issues, and additional programs to improve many Turkey Point processes such as a review of the plant against the FSAR. In the later phases of the PEP, an assessment program was instituted to include design bases reconstitution, detailed audits including system walkdowns, comprehensive reviews by the Safety Engineering Group, and assessment of the configuration control program. In addition, a Select System Review (SSR), a design bases review and in some cases a reconstitution, was conducted on selected systems in the middle 1980s by the Safety Engineering Group (SEG).

In 1989, FPL began to assume the A/E design functions. Engineers were placed in A/E offices to train and work hand-in-hand with the A/E design engineers. By late 1990, FPL engineering was performing design, production engineering, and design modification functions, with the exception of major projects.

In 1991, the restart from the EPS project included a detailed restart evaluation of the facility prior to returning the units to power. This restart evaluation was a detailed review of the configuration control process for the EPS portion of the facility.

To respond to the concerns about design bases control, in the late 1980s, FPL implemented extensive improvements in plant processes and design bases documentation. Starting in 1984, FPL engineering implemented an enhanced Engineering Package (EP) process that required, for important facility changes, that the appropriate design bases information be reconstituted to assure an acceptable design change.

Starting in 1985 and continuing until 1989, FPL implemented a design bases reconstitution program for selected safety related and non-safety related systems at Turkey Point. The output of this process was the issuance of the Turkey Point Design Basis Documents (DBDs) in 1989. The DBDs have since been periodically updated on approximately the same frequency as the FSAR.

Since 1989, FPL has made improvements to the overall FSAR updating process to enhance its accuracy of updating. Each engineering design change or stand-alone evaluation is required to address the impact on the FSAR as part of the engineering change process and include proposed changes to the FSAR with the issuance of each design change package, as applicable. This process provides a comprehensive mechanism for inserting change information into the FSAR and into the DBDs.

During the later stages of the PEP, an extension of the SSR included a systematic design investigation which provided a risk based method for setting priorities for the resolution of technical concerns that resulted from the design bases reconstitution project. The concerns were addressed commensurate with the safety significance and associated risk of the particular item. This program was considered a strength by an NRC inspection team (NIR 89-203).

During the fall of 1986, FPL requested changes to the Technical Specifications to make them consistent with the standard Technical Specifications for Westinghouse facilities. The revised Technical Specifications were approved in 1990 with implementation occurring in August of 1991. This complete revision of the Technical Specifications resulted in an established baseline of recent NRC review of the Turkey Point Technical Specifications.

In 1991, a configuration management manual was issued which described the on-site design and configuration control responsibilities as well as process requirements for plant design, interfaces, reviews and approvals. Implementing engineering and administrative Quality Instructions were developed which represent a complete and definitive set of design and configuration control procedures.

More recent programs such as the Containment Structure Re-analysis, the Emergency Power System upgrade and the Thermal Power Uprate have provided an adequate and available design bases for systems, structures and components as well as their associated operating, maintenance, and testing procedures.

Due to the evolutionary nature of each of the processes discussed in this response, the descriptions of the processes are a snapshot in time. Each of the processes is subject to controlled change consistent with Turkey Point procedures.

5.0 Commitments

Turkey Point will complete its assessment of the plant processes using the approach outlined in NEI 96-05, "Guidelines for Assessing Programs for Monitoring the Licensing Basis," which will address programmatic and non-programmatic FSAR changes and assess four risk significant systems described in the FSAR. Following completion of the "NEI" initiative, FPL intends to perform an additional detailed review of portions of the FSAR over a two year period to identify and correct documentation discrepancies. If the need is identified as a result of these reviews, a Safety System Functional Assessment will be completed on an appropriate system or group of systems.

The details of the Turkey Point commitments are included in section [f] of the Enclosure.

NRC Request [a] **"Description of engineering design and configuration control processes, including those that implement 10 CFR 50.59, 10 CFR 50.71(e), and Appendix B to 10 CFR Part 50."**

Turkey Point Response

The following outline provides the organization of the response to request [a].

1.0 Configuration Management Overview

2.0 Detailed Descriptions of Engineering Design and Configuration Control Processes

- 2.1 Engineering Design Control Processes
- 2.2 Configuration Control Processes

3.0 Implementation of 10 CFR 50.59

- 3.1 Unreviewed Safety Question Determination Process
- 3.2 10 CFR 50.59 Screening and Evaluation Process
- 3.3 The 10 CFR 50.59 Safety Evaluation
- 3.4 Non 10 CFR 50.59 Activities

4.0 Engineering Design and Configuration Control Process Training

- 4.1 Engineering Support Personnel (ESP) Training and Qualification
- 4.2 Shift Technical Advisor (STA) Training Program
- 4.3 Nuclear Plant Supervisor (NPS) Training Program
- 4.4 PNSC Training Program

5.0 10 CFR 50.71(e) Implementation Process

- 5.1 FSAR Updates
- 5.2 Design Basis Document Updates

6.0 10 CFR 50, Appendix B Implementation Process

Turkey Point recognizes that maintaining current and accessible design documentation is important to ensure that; (1) the plant physical and functional characteristics are maintained and are consistent with the design bases as required by NRC regulation, (2) systems, structures, and components can perform their intended functions, and (3) the plant is operated in a manner consistent with the design bases. This is accomplished through the Turkey Point Configuration Management (CM) processes, which encompass engineering design and configuration control.

1.0 Configuration Management Overview

The CM is comprised of processes that are used to control the plant design bases, design, design changes, physical configuration, operations, maintenance, testing, procurement, installation, training and documentation. The CM program ensures that, throughout the life of the plant the following occur:

1. Design bases are identified, documented and maintained.
2. Approved design documents accurately reflect and implement the design bases.
3. Plant physical structures, systems, components, (SSCs), and process control computer software conform to the approved design requirements.
4. Plant physical and functional characteristics are accurately reflected in plant documents.
5. Plant conditions conform to the requirements included in the design bases, procedures and other approved documents which are used to control the operation of the plant.
6. Changes to the design or physical plant are optimized through an integrated management review process with established approval criteria to minimize changes to the design or physical plant.
7. Changes to the design are approved, planned, budgeted and scheduled for all phases of the change from design through implementation and document update.
8 Consistency is maintained between design bases, design documents, hardware, software, and plant procedures.

Turkey Point activities which affect the CM goals listed above are controlled by engineering design and configuration control processes. These processes ensure that the plant design, as-built condition, and operation remain in conformance with the original plant design bases and subsequent licensing commitments.

2.0 Detailed Descriptions of Engineering Design and Configuration Control Processes

2.1 Engineering Design Control Processes

2.1.1 General Description

The processes whereby the design and design bases are maintained and controlled include all plant departments. The engineering design control processes are controlled under FPL Engineering Quality Instructions (ENG QIs). ENG QIs are designed in a hierarchical fashion with reference to interfacing instructions. The overall governing ENG QI for the engineering design control processes is ENG QI 1.0, Design Control. This instruction leads the engineer/designer/user to other governing instructions for maintaining and controlling the plant license, design bases, as-built design documentation, and operations, maintenance and testing procedures.

Determination of the appropriate process vehicle to initiate a design change requires the understanding of the scope of the proposed change. The design change process is divided into Plant Change/Modifications (PC/Ms) and Non-Plant Change/Modifications (Non-PC/Ms).

The PC/M process is further subdivided into major and minor changes. Major design changes to the plant are controlled under ENG QI 1.1, Engineering Package (EP) and are implemented using the complete PC/M EP process to perform modifications which constitute a change to the facility (physical and/or documentation), requiring a 10 CFR 50.59 safety evaluation. EPs usually contain detailed implementation and testing information for complex and involved design changes.

Minor design changes to the plant are controlled under ENG QI 1.2, Minor Engineering Package (MEP) and are implemented using the process to perform minor modifications which constitute a change to the facility (physical or documentation) but which do not require a 10 CFR 50.59 safety evaluation. MEPs include 10 CFR 50.59 screening to document that a 10 CFR 50.59 safety evaluation is not required.

The Non-PC/M process is used for Drawing Change Requests (DCRs), Item Equivalency Evaluations (IEEs), Non Nuclear Safety (NNS) Minor Scope Changes (MSC), and Maintenance Specifications. This process is also used for Temporary System Alterations (TSAs), design document updates, minor repairs, and maintenance activities.

2.1.2 Plant Change/Modification (PC/M) Process

For PC/Ms, the engineering design change control process includes:

Design Change Initiation
Design Change Package Preparation
Design Implementation
Documentation Updates

2.1.2.1 Design Change Initiation

A change to the plant design may become necessary for a number of reasons, such as new or changing regulatory requirements, equipment reliability problems, obsolete equipment, or operational improvements. The need for a change can be identified by any employee at the plant. When a change to the plant design is proposed, it must first be justified by the appropriate plant department before engineering may be requested to evaluate the change.

A plant modification is usually proposed by using the Request for Engineering Assistance (REA) process. The REA process, 0-ADM-510, Request for Engineering Assistance, can be initiated by any member of the plant staff requiring assistance from Engineering to resolve plant problems, conduct engineering studies, reconcile discrepancies, and update design documentation. This process provides the rough scope, the purpose, the budget, the cost and benefit, the implementing organization, the design/safety significance, and the relative priority for a project candidate. REAs are processed using one of two paths: Real-Time Support (RTS) review group for easily implemented projects, and Project Review Board (PRB) management review group for larger or construction intensive projects. Following the issuance of an REA, Engineering performs a scope, schedule and cost estimate for a suggested project, including the evaluation of design options. If various options are possible, plant input is solicited in order that issues of cost, simplicity, maintainability, usability, etc. may be factored into the evaluation for the preferred

option. This initial information is used by the RTS or PRB review groups to justify final approval for Engineering to prepare a design package and for the implementor to complete procurement and implementation activities. The review groups are composed of plant management or their designees who review and approve projects, authorizing the use of engineering resources both for estimating and designing activities. The review includes consideration of the number of design changes planned for outage and non-outage work period, so that work scope can be scheduled and managed properly. If approved, the REA is forwarded to Engineering for design change package preparation.

2.1.2.2 Design Change Package Preparation

The design engineers prepare design changes in accordance with the licensing, design basis, design standards, and configuration management requirements governed by ENG QI 1.0, Design Control, and ENG QI 1.1, Engineering Package (EP). These procedures are approved under the QA 10 CFR 50 Appendix B program. Personnel who prepare design changes are appropriately trained and experienced.

The basic steps in the design change process include:

a. The design engineer(s) conducts research and interfaces with the design change sponsor(s) to obtain a full understanding of the design change justification, scope, licensing/design impact, interdiscipline design requirements, affected engineering/operations documentation, etc.

   Applicable Operating Experience Feedback (OEF) (lessons learned from other utilities) can be retrieved and factored into designs or design modifications. Engineers stay current with FPL and nuclear industry operating experience related to engineering activities. NRC Bulletins, Information Notices, other regulatory requirements, internal FPL correspondence related to nuclear design experience, experience reports received from manufacturers and other industry sources are circulated appropriately. In the development of a design document, the following computerized information retrieval services are currently available and may be used to obtain data related to design or safety analysis input: OEF program (FPL), Nuclear Plant Reliability Data System (INPO), Technical Library Database (INPO), Nuclear Network (INPO), LER database (INPO), NRC Index (INPO), and SERCH/REGIS (Bechtel Database).

b. The design engineer(s) identifies and assembles the design inputs that must be considered in preparing the design or design change. Design input is defined as the set of criteria, parameters, bases or other information upon which detailed final design is based. Design changes are based upon existing design bases documentation. Design inputs are identified from the following sources:

   - FSAR/Technical Specifications
   - Regulatory Requirements
   - Licensing Commitments

- Bases Documents (calculations, diagrams, drawings, design specifications, analyses, studies, vendor documents, DBDs, etc.)
- Applicable Codes and Standards Requirements
- Equipment/Component Specifications
- Engineering Documents
- Requests for Engineering Assistance
- Change Request Notices
- Condition Reports

The design organization performs design integration activities to ensure that all new designs/design changes are consistent with the base plant design, and that consideration is given to related design and design changes in progress. The design integration activities include a review of information sources such as TSA logs, and abandoned equipment logs. To aid the design integration, electronic information sources which are part of the PassPort database (FPL's computerized management information system) are also available. These include the PC/M Index, Calculation Index, Engineering Evaluation Index, and Total Equipment Data Base. This review provides assurance that no other modifications which are in progress can affect the modification package which is being prepared. A limit is imposed by management on the number of modifications that are processed at the same time in order to minimize integration difficulties.

c. The design engineer(s) performs the detailed design change and prepares 10 CFR 50.59 screening and/or safety evaluations.

The PC/M defines the scope of the modification and activities associated with the change. The safety evaluation is a major part of the EP and is required to demonstrate that the provisions of 10 CFR 50.59 safety evaluation are met when performing a design modification. The requirements of 10 CFR 50.59 are a subset of the overall safety evaluation objectives. The safety evaluation addresses the overall safety aspects of the modification including description and purpose of the change, analysis of effects on safety, failure modes and effects analysis, effects on Technical Specifications, Unreviewed Safety Question (USQ) determination, and plant restrictions.

The detailed design effort includes walkdowns of affected systems and components to verify their field configuration and their consistency with plant design drawings. Design change packages undergo interdisciplinary reviews, i.e., conceptual, detailed, and final, involving engineering and plant personnel. When the proposed design is substantially complete, a draft design change package is issued so that input can be solicited from the appropriate department or group such as Operations, Maintenance, the System and Component Engineers, Health Physics, Plant Change Control (PCC), etc. The early and final review processes ensure that the design change is understood and meets the design basis, design and operations requirements. They also ensure that the impact of the design change is reflected in the appropriate plant design documents and procedures, and that the final product will be acceptable upon turnover to the

plant. After incorporating interdepartmental comments, the design change package is finalized by Engineering.

d. The design engineer(s) and other affected site organizations identify and assemble the documentation affected by the design or design change for inclusion in the P/CM package. Documentation is updated and maintained to reflect the "as-built" status of the plant. Responsibility for updating each type of documentation is assigned to the appropriate department, functional group, or organization. The affected design PC/M documents are tracked in FPL's PassPort database to aid in design integration. The types of documents that may be affected include:

- FSAR
- Licensing Documents
- Design Bases Documents
- Engineering Drawings
- Design Specifications
- Equipment Specifications
- System Specifications
- Calculations
- Analyses
- Vendor Drawings
- Vendor Instruction Manuals
- Databases
- Indices

The final design change package is approved and issued by Engineering management and is processed by the plant for implementation and document control.

2.1.2.3 Design Implementation

The design change package is then submitted to PCC. The approved design change package is routed to affected plant departments for review and preparation for implementation. The appropriate discipline identifies training requirements and any functional tests required to be performed following the modification. The implementing departments prepare work documents, i.e., Plant Work Orders (PWO), which provide step by step instructions for implementing the design change. Each affected department identifies revisions to programs, processes, and documents required as a result of the design change. These revisions are made in accordance with plant procedures ensuring that plant SSCs are installed and operated in accordance with established design requirements and plant documentation. PCC submits the PC/M package to the Plant Nuclear Safety Committee (PNSC), a multi-discipline senior member group, for review and recommendation to the Plant General Manager (PGM) for approval. Upon approval by the PGM, the design change may be implemented. The Company Nuclear Review Board (CNRB) also provides an independent review of the design modifications to verify that the change did not constitute a USQ. Both the PNSC and the CNRB reviews constitute Technical Specification requirements for Turkey Point.

2.1.2.3.1 Changes to PC/M

After a PC/M has been issued for implementation and prior to final closure, a minor technical change or a documentation change to the PC/M is evaluated for disposition via the Change Request Notification (CRN) process. The engineering design organization reviews and resolves CRNs. If the change to the PC/M affects the safety evaluation, design criteria or original PC/M intent, then the PC/M is revised and the revisions to the PC/M receive the same review as the original PC/M. A special PC/M which is issued periodically and titled "Minor Drawing Enhancements", is used to make administrative changes to design documents. Each change is processed as a CRN to the PC/M.

2.1.2.3.2 PC/M Closure

The Plant Change Control (PCC) department is the plant organization specifically tasked to supervise processes affecting configuration management and to ensure that the plant design and configuration are maintained accurately. The implementing department provides the implementing documents to PCC as a turnover package. Formal verification of completion by PCC entails verifying the completeness of open items from the implementing department, satisfactory completion of PC/M requirements including implementation instructions, tests and inspections, and compliance to governing procedures.

2.1.2.4 Documentation Updates

Drawings required by Operations for the safe operation of the plant are defined by Turkey Point and Engineering procedures as Plant Operating Diagrams (POD). As part of the PC/M closure process, these drawings and affected plant operating procedures are updated and placed in the Control Room prior to Operations department accepting the modification. The remaining documentation is updated in accordance with approved procedures that define a required timeframe within which the update process must be completed.

2.1.3 Non-PC/M Process

Non-PC/M processes allow administrative document updates and equivalent replacements (but not design changes). The non-PC/M processes, including document updates and equivalent item replacements are intended for changes that are outside of the scope of 10 CFR 50.59, but a screening is conducted to ensure the change does not require a 10 CFR 50.59 safety evaluation or Technical Specification change. The non-PC/M process controls temporary system alterations, equivalent replacements, minor scope changes, drawing change requests, and design document updates. These activities are controlled under Engineering and Plant procedures.

The Temporary System Alterations (TSA) process, 0-ADM-503, Control and Use of Temporary System Alterations, maintains plant and design configuration control for non permanent changes to plant SSCs, while ensuring the applicable technical and administrative reviews and approvals are obtained. The TSA process ensures that personnel are aware of temporary plant configuration and that TSAs made to plant equipment do not unacceptably degrade the original design intent. To maintain plant configuration control, the affected drawings are required to be redlined to

reflect the temporary plant configuration. These redlined drawings are made available in the Control Rooms, the Work Control Center, Technical Support Center and the Operations Support Center within one day of the TSA implementation.

The Item Equivalency Evaluation (IEE) process is used to perform equivalent item replacements requiring implementation that is within the bounds of a maintenance activity. An IEE is required if a replacement item is not a like-for-like (identical) replacement for the original item. IEEs determine and document the acceptability of non-identical replacement items by evaluating form, fit and function. Implementation of the replacement item must fall into the maintenance arena (no modifications or construction), if not, the appropriate design change vehicle is required to replace or augment the IEEs.

The Drawing Change Request (DCR) process is used to perform administrative changes to design documents for which there is an approved basis (no physical change or design change). Typical uses of DCRs are administrative changes to controlled documents, changes in controlled documents substantiated by IEEs, reflection of as-found conditions in controlled documents substantiated by a verified Nonconformance Report (NCR) or Condition Report (CR) disposition.

The Non-Nuclear Safety (NNS) Minor Scope Changes (MSC) process is used to perform minor NNS changes in support of maintenance activities (which have a technical relationship or interface with the plant), but do not affect critical piping welds, PODs or plant operating procedures. A MSC is a change to a plant configuration that is evaluated as equivalent in form, fit and function. Changes performed under this process constitute maintenance activities and are not considered to be modifications to the plant. The CR process is the mechanism used to initiate MSCs.

Certain engineering specifications referred to as "Re-use", provide generic guidance, instructions and details which can be used as applicable, to process, fabricate, install, inspect and/or perform maintenance, e.g., replacement/refurbishment, during routine maintenance activities. These engineering specifications are supported by 10 CFR 50.59 safety evaluations if determined to be required. Each specification identifies what activities it addresses. The appropriate specifications can be invoked within plant documents e.g., PWOs, for routine maintenance activities. If plant Maintenance determines during the implementation of a PWO that the maintenance activity may not be covered by the engineering specification, an engineering review is required. A Maintenance Request Authorization (MRA) form is used by the PWO implementor to request an engineering review. A Request for Specification Clarification or Change Sheet which is similar to an MRA may also be used. Engineering screens and reviews the MRA and either approves or disapproves the change requested by the MRA. If the MRA is disapproved, the design change process is entered, e.g., an REA may be issued.

2.1.4 Types of Evaluations

When design changes are desired/required the safety evaluation process is required to demonstrate that safety is maintained in the modification process by preserving the licensing bases. There are different types of evaluations performed by engineering and other qualified personnel for different aspects of plant support. These include general evaluations (studies, feasibility assessments, submittal), operability assessment, nonconformance assessment and

resolution, condition assessment and resolution, proposed license amendments (10 CFR 50.90), probabilistic safety assessment, etc.

2.1.4.1 Stand-Alone Evaluations

Stand-alone evaluations are used for meeting 10 CFR 50.59 requirements in which no hardware change is involved, thus an EP may not be required. The stand-alone safety evaluations include a concise description of the proposed change, why the change is necessary, the effect on plant operation and safety, any changes in design or operating practices or philosophy, any restrictions on plant operations, whether a USQ exists or Technical Specification change is involved. The evaluation also describes the licensing requirements including the information normally contained in the design section of an EP and the actions required including short term and long term actions by the plant and/or engineering departments. The affected documents are identified and the appropriate change package is attached to the evaluation, including a list of applicable documents used in preparation of the evaluation. These evaluations are submitted to the PNSC for review and recommendation for approval by the PGM. Any action items listed in the evaluation are tracked using the Plant Management Action Item Process (PMAI) process.

2.2 Configuration Control Processes

2.2.1 General Description

The configuration control processes integrate all plant activities. These processes accomplish the CM process objectives described in Section 1.0 above by defining and documenting the requirements for maintaining the plant's configuration (design, physical plant, and procedures) consistent with the plant design bases.

The governing procedures for these processes are Engineering and Plant QIs and other applicable plant procedures some of which are listed below:

ENG QI 1.0	Design Control
ENG QI 1.1	Engineering Package (EP)
ENG QI 1.2	Minor Engineering Package (MEP)
ENG QI 1.3	Drawing Change Requests (DCR)
ENG QI 1.4	Change Request Notices (CRN)
ENG QI 2.0	Engineering Evaluations
ENG QI 2.1	10 CFR 50.59 Screening/Evaluation
ENG QI 2.4	Non-Conformance Reports (NCR)
ENG QI 2.5	Condition Reports
ENG QI 3.0	Quality Assurance Records
ENG QI 3.1	Controlled Document Distribution
ENG QI 3.2	Drawing Control
ENG QI 3.3	Vendor Technical Manual Control
ENG QI 3.4	FSAR Updating
ENG QI 3.5	Design Basis Document (DBD) Updating
ENG QI 3.6	Total Equipment Data Base (TEDB)

ENG QI 4.2	Procurement Engineering Control
ENG QI 6.7	FSAR Reviews
QI 3-PTN-1	Design Control
QI 4-PTN-1	Procurement Control
QI 6-PTN-1	Document Control
0-ADM-059	Root Cause Evaluation
0-ADM-054	PMAI Corrective Action Tracking Program
0- ADM-100	Preparation, Revision, Review, Approval and use of Procedures
0- ADM-102	On the Spot Changes to Procedures
0-ADM-212	In Plant Equipment Clearance Orders
0-ADM-507	Processing Safety Evaluations
0-ADM-515	Operating Experience Feedback
0-ADM-518	Condition Reports
0-ADM-701	Control Of Plant Work Orders
0-ADM-737	Post Maintenance Testing

2.2.2 Integration of Configuration Control Processes

Configuration Control processes establish the authorities and responsibilities for integrating plant activities which could affect the plant configuration. They ensure that the integrity of the design bases is maintained by requiring changes that may impact the design bases are reviewed by the proper organization. These changes include physical changes to the plant that may originate through the modification process, or daily operational and maintenance tasks. The design bases, in turn, must be accurately reflected in the engineering, licensing, operating, maintenance, testing, training, and quality assurance documents for the plant with consistency maintained between these documents in a timely manner.

2.2.2.1 Design, Physical, and Operational Plant Configuration Change Processes

The design change PC/M package preparation activities are performed by Engineering and must account for affected design and administrative documents. Design integration reviews are performed to ensure that "open" plant changes in progress do not conflict or compete with the intended new design change. Relational databases to track change documents and other design integration tools facilitate this design integration review are available. Walkdowns are performed to validate the design change packages against field conditions and in progress design integration activities. As-building of affected documents is automatically triggered upon completion of a design change package within the relational document control databases.

Part of the design change activities is the procurement control process that provides a mechanism to purchase initial parts and services for PC/Ms, and subsequent stock replacement parts, and a mechanism to ensure only appropriate parts are bought and made available for plant use.

Plant work is controlled and documented with the Plant Work Order (PWO) process. This process is a mechanism to provide the administrative requirements and work controls for plant work activities on Safety Related (SR), Quality Related (QR), and NNS SSCs. The PWO is the primary implementing document for PC/Ms. PWOs become the plant's historical work records.

When work is complete, the information provided in the PWOs is entered into FPL's PassPort database for easy retrieval.

Changes to the plant's operational configuration that are not controlled by procedures, are controlled and documented with the clearance process, 0-ADM-212, In Plant Equipment Clearance Orders. This process tracks electronically the removal and restoration of equipment out of service. The clearance process provides administrative controls that allow for the isolation of components for maintenance activities, or for the safety of plant personnel and equipment. Each clearance is checked against Technical Specification requirements, and risk significance prior to the issuance of the clearance. Multiple reviews and checks are performed to ensure that the components are isolated and restored correctly to operable status.

Design changes are required to be reviewed by interfacing organization personnel knowledgeable in plant processes and configuration, and by system engineers knowledgeable about the affected SSCs. Operations, maintenance and testing personnel perform interface reviews for PNSC affected procedures. A final review by the Plant Nuclear Safety Committee is performed for safety impacts..

During implementation, any necessary field changes must first be documented and approved by Engineering, via the CRN process before they are implemented. Post-modification testing requirements are part of the design change package and test results become part of the design change permanent records. Implementation documents such as temporary procedures, test results, etc., are submitted to PCC for review as an Implementation Turnover package (ITOP). This package is then used to prepare a System Acceptance and Turnover Sheet (SATS) prior to turnover of the modified equipment/system to Operations. This system acceptance and turnover process which is used as part of the final design change implementation, requires mandatory approval from all affected plant departments.

High priority affected documents (operating procedures, PODs, logic diagrams, etc.) receive first priority for update upon notification of design change implementation completion. These documents must be updated and available as part of the final system acceptance and turnover (SATS). Training is conducted on design changes and operations procedures, usually prior to final system acceptance.

2.2.2.2 Procedure Change Process

This process provides a mechanism to make procedure changes in a controlled manner. Procedure changes may be either permanent or temporary. Procedures and changes to the procedures require as a minimum a 10 CFR 50.59 screening to determine if the change is consistent with the FSAR, Technical Specifications or whether a USQ exists. If a 10 CFR 50.59 safety evaluation is prepared for changes to a procedure, the changes are reviewed by the PNSC. Procedures required to be reviewed by Technical Specification are reviewed by the PNSC. New procedures are validated prior to use and revised procedures may be validated if the change is extensive in nature.

2.2.2.3 Document Control Process

The document control process governs the preparation, issuance, and revision of documents such as instructions, procedures, and drawings which describe activities affecting quality. Document control processes ensure that documents including changes, are reviewed, approved for release by authorized personnel, and distributed to the responsible individuals/organizations for implementation and use as appropriate. Databases that identify the most recent approved revision of documents are maintained. Controls that prevent the inadvertent use of obsolete or superseded documents are provided. Document control process responsibilities include identifying, storing, updating, and retrieving appropriate documents throughout the life of the plant. The FSAR and DBD updating processes are described in section 5.1 and 5.2, respectively which addresses the implementation process for 10 CFR 50.71(e) requirements.

2.2.2.4 Quality Assurance Records

Records are maintained to provide documentary evidence of the performance of activities affecting quality including design activities. Turkey Point QA records are maintained at the Corporate Records Center in Riviera Beach, Florida. Working copies are available at the site.

2.2.3 Discrepancy Documentation and Commitment Tracking Processes

2.2.3.1 Condition Report (CR) Process

The CR process allows plant staff to document, evaluate, analyze and correct conditions of concern. CRs are initiated for nonconformances and other events or conditions that may appear to be adverse to the safe and orderly conduct of plant operations. The CR process is not intended to replace or duplicate the functions of other Turkey Point programs which provide for identification, disposition and trending of adverse conditions, e.g., PWOs, REAs. The CR originator delivers the CR to the Nuclear Plant Supervisor (NPS). The NPS reviews each CR for operability and reportability concerns, logs it and forwards it to the PGM. The PGM screens each CR and assigns the investigating group responsible for the investigation, analysis and determination of corrective actions if required. The Condition Report Oversight Group (CROG) reviews daily the CRs generated in order to verify reportability, outage significance, and classification of condition. The dispositioning Department Head determines if the root cause is adequately identified and if the corrective actions are adequate to prevent recurrence. Closing a CR requires that the PGM accepts satisfactorily completed evaluations. If the corrective actions are not completed within the designated time frame, the remaining open items are transferred to Plant Management Action Item (PMAI) or other tracking system.

2.2.3.2 Nonconformance Report (NCR) Process

The NCR is considered as a subset of the CR process which provides a means for capturing potential or real concerns with respect to the plant, and allows for their correction using other existing and integral plant processes, e.g., the PC/M process, PWO. Nonconformances have historically been addressed using an NCR. The NCR provides a mechanism for documenting the identification of a nonconformance, getting appropriate reviews, and resolving the nonconformance or taking corrective actions. This process is used to collect data for future improvements. It is a mechanism used by plant members to document nonconforming conditions,

and it allows engineering personnel an opportunity to critique the design. Engineering evaluates the NCR and provides an appropriate disposition (i.e., corrective action, if any) to the NCR for implementation. An NCR's relatively narrow scope does not provide the flexibility to address various conditions that might exist in the plant.

2.2.3.3 Plant Management Action Item (PMAI) Process

The PMAI process provides a method for controlling and scheduling corrective actions to meet internal commitments and ensures follow up and closure of long term corrective actions generated by the CR process. The PMAI is a tracking system which follows the corrective actions to completion and gives the items visibility within the plant organization.

2.2.3.4 Commitment Tracking Process

A commitment tracking process is in place to provide a method of identifying and tracking commitments. Sources of commitments include Licensee Event Reports, Notice of Violation responses, NRC requirements, INPO or internal audit findings, and NRC safety evaluation reports. The major objective of the process is to assure completion of the commitments in a timely manner.

3.0 Implementation of 10 CFR 50.59

The 10 CFR 50.59 safety evaluation provides assurance that the documented information used and understood by the NRC, as a basis for licensing the facility, remains valid in light of the proposed changes. FPL uses NSAC 125 as guidance for conduct of safety evaluations and 10 CFR 50.59 screens.

When proposed design changes are desired or required, the 10 CFR 50.59 process determines if the change requires a revision to Technical Specifications or if the change constitutes an USQ.

3.1 Unreviewed Safety Question Determination Process

Changes to the facility, procedures described in the FSAR, or a test or an experiment not described in the FSAR are screened for the need to determine if a USQ exists. This section discusses the definitions of a change, the 10 CFR 50.59 screening process, and the preparation of a formal safety evaluation in accordance with 10 CFR 50.59.

3.1.1 Change to the Facility

Changes to the facility include additions or deletions of SSCs described in the FSAR, modifications which affect design function or method of performing a function of a SSC, and temporary modifications.

3.1.2 Change to the Procedures

FPL revises procedures as described in the FSAR without prior NRC approval provided the change does not involve a Technical Specification change or a USQ. Procedures that may require a 10 CFR 50.59 safety evaluation are those that are outlined, summarized or completely described in the FSAR.

3.1.3 Tests and Experiments

Tests and experiments that require a 10 CFR 50.59 safety evaluation are those that are not discussed in the FSAR, but are within the scope of the FSAR, i.e., tests and experiments which could degrade the margins of safety during normal operations, anticipated transients, or that could degrade the adequacy of SSCs to prevent accidents or mitigate accident conditions. 10 CFR 50.59 safety evaluations are also required for changes to tests or experiments described in the FSAR.

3.2 10 CFR 50.59 Screening and Evaluation Process

An evaluation of a change to the facility for 10 CFR 50.59 applicability is made for changes at Turkey Point. This evaluation is referred to as a 10 CFR 50.59 screening. Therefore, formal safety evaluations are limited to those changes that fall within the scope and the intent of the 10 CFR 50.59 rule. The applicable procedures to the design change process contain guidance on screening criteria. The following criteria are used in screening activities for 10 CFR 50.59 applicability:

1. Does the change represent a change to the facility as described in the FSAR?

2. Does the change represent a change to procedures as described in the FSAR?

3. Is the change associated with a test or experiment not described in the FSAR?

4. Could the change affect Nuclear safety in a way not previously evaluated in the FSAR?

5. Does the change require a change to the Technical Specifications?

A positive response to any of questions 1 - 4 requires a formal 10 CFR 50.59 safety evaluation. A positive response to question 5 requires a license amendment in accordance with 10 CFR 50.90 prior to change implementation. Furthermore, a design change which requires a change to the Technical Specifications requires NRC review and approval of a license amendment prior to implementing the change.

3.3 The 10 CFR 50.59 Safety Evaluation

For the purpose of a safety evaluation the 10 CFR 50.59 criteria have been expanded into seven questions for clarity:

1. Does the proposed activity increase the probability of occurrence of an accident previously evaluated in the SAR?

2. Does the proposed activity increase the consequences of an accident previously evaluated in the SAR?

3. Does the proposed activity increase the probability of occurrence of a malfunction of equipment important to safety previously evaluated in the SAR?

4. Does the proposed activity increase the consequence of a malfunction of equipment important to safety previously evaluated in the SAR?

5. Does the proposed activity create the possibility of an accident of a different type that any previously evaluated in the SAR?

6. Does the proposed activity create the possibility of different type of malfunction of equipment important to safety than previously evaluated in the SAR?

7. Does the proposed activity reduce the margin of safety as defined in the basis for any Technical Specifications.

Based upon the answers to these questions, a determination is made if a USQ exists or a Technical Specification change is required. If either exists, NRC review and approval of a license amendment is obtained prior to the change being implemented.

The primary participants in the 10 CFR 50.59 safety evaluation preparation are as follows:

a. A properly trained and qualified preparer develops an understanding of the design bases of the plant and applicable regulatory requirements, and is familiar with the concepts and terminology of the 50.59 process. The design change under consideration typically falls within the preparer's field of expertise.

b. A properly trained and qualified reviewer that has not been participating in the preparation of the 50.59 evaluation verifies the acceptability of the safety evaluation.

c. The PNSC is composed of managers (or designees) representing the functional areas of the plant and provides a multi-discipline review of the safety evaluations in accordance with 10 CFR 50.59 guidelines and concurs with the determination that an USQ does not exist and no Technical Specification change is required.

d. An offsite safety review board, the CNRB, composed of officers, managers, or specialist in design, operations, safety analysis or related activities with extensive nuclear plant expertise is responsible for the review of evaluations prepared according to 10 CFR 50.59 guidelines. The purpose of the review is to confirm the change did not constitute a USQ and no Technical Specification change is required.

e. Quality Assurance performs periodic audits of organizations involved in the 10 CFR 50.59 evaluation process. Audit results are documented and reviewed by management having responsibility in the specific areas audited. Corrective actions are documented and follow audits are then performed.

The 10 CFR 50.59 safety evaluation process is applied to potential design, physical plant and procedural changes that may impact the plant license, design bases or the FSAR. However, there are changes to the plant which are not governed by the 10 CFR 50.59 requirements and are managed under Turkey Point procedures. These are referred to as non-10 CFR 50.59 activities as discussed below.

3.4 Non 10 CFR 50.59 Activities

Plant activities, controlled under various administrative, engineering, operations and maintenance procedures, which are not normally considered design activities, but which could possibly affect the design bases are screened for 10 CFR 50.59 applicability. Each procedure controlling these activities contains a requirement to perform a 10 CFR 50.59 screening. These screenings are performed by qualified personnel trained on the 10 CFR 50.59 requirements.

4.0 Engineering Design and Configuration Control Process Training

The training associated with engineering and design configuration and control processes that implement 10 CFR 50.59, 10 CFR 50.71(e), and Appendix B to 10 CFR Part 50 includes:

4.1 Engineering Support Personnel (ESP) Training and Qualification

Initial indoctrination training for engineering support includes a basic review of the plant QIs and procedures associated with the configuration control process, the plant modification process, the use of a 10 CFR 50.59 safety evaluation to modify the plant or identify an unreviewed safety question. Each of the reviews is part of the initial indoctrination training section of the Institute for Nuclear Power Operations (INPO) accredited ESP Training Program for all new Engineering Support Personnel.

The ESP Qualification Guides provide individual qualification requirements. These qualification requirements are based on an evaluation of the individual's education, previous experience and technical training. The training required for each individual is specified by the department supervisor.

4.2 Shift Technical Advisor (STA)Training Program

The STA is responsible for reviewing CRs for safety issues and procedure changes for applicability to the requirements of 10 CFR 50.59. STAs are trained on the requirements of 10 CFR 50.59 and the requirements of the CR process.

4.3 Nuclear Plant Supervisor (NPS) Training Program

The NPS training program contains specific lessons on plant modifications, setpoint change responsibility and applying design basis to operations.

4.4 PNSC Training Program

A lesson on 10 CFR 50.59 requirements is presented as part of the PNSC initial and requalification training. It is designed to introduce PNSC members and alternates to their responsibilities as related to PNSC review of procedure and design changes.

5.0 10 CFR 50.71(e) Implementation Process

The engineering design and configuration control processes described in the response to this request detail the activities that ensure the accuracy of the changes which are made to the FSAR.

5.1 FSAR Updates

The Turkey Point FSAR, which was originally submitted to the Atomic Energy Commission (AEC), as part of the operating license application; is maintained and updated in accordance with the requirements of 10 CFR 50.71(e)(3)(i). Turkey Point Units 3 and 4 share a common FSAR with the update amendment schedule based on the Unit 4 refueling outage. Amendments reflect FSAR changes up to a maximum of 6 months prior to the date of filing. Special FSAR amendments may be submitted to the NRC more frequently than the minimum required by 10 CFR 50.71(e)

The primary responsibility for implementation of the FSAR updating process resides within the Turkey Point Engineering Department. ENG QI 3.4, FSAR Updating, provides the instructions for updating the FSAR in accordance with 10 CFR 50.71(e).

FSAR amendments consider the following categories of items implemented, revised, or identified since the last amendment:

- Changes made in the facility/procedures as described in the FSAR
- Safety analyses performed in support of license amendments
- Safety evaluations performed per 10 CFR 50.59
- Safety evaluations performed at the request of the NRC
- New or modified NRC requirements
- Changes made to drawings contained in the FSAR
- Commitments made in FPL to NRC correspondence
- Corrections to the FSAR
- Changes to design bases or design criteria identified in the FSAR
- Changes to quality, procedural, test, inspection, or other criteria cited in the FSAR
- Abandoned equipment noted in the FSAR

Engineering design changes are procedurally required to address the impact on the FSAR as part of the engineering design change process, and to include proposed changes to the FSAR with the issuance of each design change package, as applicable. This process provides a comprehensive mechanism for capturing changes to the FSAR and for their incorporation into the design bases. Changes to the facility may affect the FSAR descriptions and associated accident analyses. Engineering design outputs, e.g., EPs, Stand-Alone Safety Evaluations, which impact the FSAR include an FSAR Change Package (FCP) as an attachment to the document. FCPs are reviewed, and if adequate, are incorporated into the next amendment of the FSAR following the implementation of the change.

Plant design changes implemented during the update period and all 10 CFR 50.59 safety evaluations are reviewed for impact on the FSAR. When a change is proposed, the organization initiating the change determines whether the change will result in the revision of any documents. Changes to licensing documents can result from design changes, as-found conditions, evaluations, procedure revisions, and NRC requirements.

FPL responses to NRC Information requests, IE Bulletins/Circulars/Information Notices, FPL correspondence to and from the NRC, etc. may affect the FSAR. Incoming and outgoing NRC correspondence is reviewed for impact on the FSAR. If an individual determines that an FSAR change is required, an FCP is prepared along with any necessary supporting evaluations.

The intent of the NRC correspondence review is to identify and document NRC requirements that impact the design, operation, or maintenance of the facility, regardless of the level of detail associated with the requirement. Commitments in NRC correspondence to implement physical changes to the facility are not incorporated into the next FSAR revision. Physical changes are only incorporated after implementation and turnover for use.

Stand-alone safety evaluations that require FSAR changes have an FCP attached. Engineering reviews stand-alone safety evaluations forwarded by other departments and/or contractors for potential FSAR impact. FCPs are developed as necessary.

The FSAR user comment form, which is proceduralized, permits the FSAR user to identify actual or perceived discrepancies in the content or accuracy of the FSAR. FSAR user comments concerning the content of the FSAR are forwarded to Engineering for review and incorporation into the FSAR. The FSAR user comment is reviewed to determine if enough information is provided. In order to be processed for inclusion in an FSAR amendment, the user comment must meet one of the following criteria:

1) Editorial, such that back-up documentation is not required.

2) Providing sufficient bases, e.g., safety evaluation, PC/M reference, or equivalency justification to show that the desired change has been evaluated and/or analyzed.

If the criteria stated above is not met, the deficiencies are documented on the user comment form and returned to the originator. If the user comment is adequate, it is forwarded to the cognizant discipline for review and disposition.

A completed FSAR amendment is reviewed for accuracy and completeness by the appropriate plant departments prior to submittal to the NRC.

5.2 Design Basis Document Updates

The Design Basis Documents (DBD) for Turkey Point are updated in accordance with ENG QI 3.5, Design Basis Document (DBD) Updating. The primary responsibility for implementation of the DBD updating process resides within the Engineering department.

DBD updates consider the following categories of items implemented, revised, or identified since the last revision:

- Changes to design bases or design criteria identified in the DBDs
- Changes made in the systems/components described in the DBDs
- Safety evaluations performed per 10 CFR 50.59
- Safety evaluations performed in support of license amendments
- Safety evaluations performed at the request of the NRC
- New or modified NRC requirements
- Commitments made in FPL to NRC correspondence
- Changes made to figures contained in the DBDs
- Corrections to the DBDs

Changes to the facility may affect the DBD descriptions. These changes may result from design changes issued by Engineering, Contractors, or other Turkey Point departments. Engineering design outputs, e.g., EPs, MEPs, DCRs, evaluations, which impact the DBDs include a DBD Change Package (DCP) as an attachment to the document. The level of detail and format provided in DBD updates are consistent with the level of detail and format contained in the original DBDs.

The review of NRC/FPL correspondence and stand-alone safety evaluations for impact on the DBD is the same as the method used to review the FSAR updates discussed in Section 5.1. DBD user comment forms are proceduralized and used similar to FSAR user comment forms (see Section 5.1) to identify actual or perceived discrepancies in content or accuracy of the DBDs. Prior to issuing a DBD update, a review of the revised DBD is coordinated with plant personnel, Nuclear Fuels and other applicable departments.

6.0 10 CFR 50, Appendix B Implementation Process

The FPL Quality Assurance (QA) Program is described in the FPL Topical QA Report (TQAR) and is structured to be in compliance with the requirements of Appendix B to 10 CFR Part 50.

The TQAR delineates the QA Program requirements and summarizes the FPL approach to activities related to materials, parts, components, systems and services included in the QA Program. The TQAR states that a QA Program be established for design related activities. More specifically, the TQAR provides the general guidance that the design control program must ensure that the design is defined, controlled and verified, that applicable design inputs are specified and

correctly translated into design output documents; that design interfaces are identified and controlled; that design adequacy is verified by persons other than those who designed the item; and that design changes, including field changes, are governed by control measures commensurate with those applied to the original design.

The general design requirements described in the TQAR are implemented through QIs. For each applicable criterion in 10 CFR 50, Appendix B, there is a corresponding Engineering and Plant QI or series of QIs that comply with the criterion in Appendix B.

The design records are developed to provide evidence that the design process and design verification were performed in accordance with the requirements of Turkey Point's QA Program. QIs are developed as required by each of the implementing departments that describe the measures to be used to implement the quality assurance requirements. QIs describe actions and responsibilities to be performed within a department or organization and address the requirements of the appropriate TQAR requirements.

QA performs periodic audits of the configuration control processes. The FPL TQAR requires that audits be regularly scheduled for on-going activities, and the scope of those audits include the preparation, review, approval and control of the SAR, designs, specifications, procurement documents, instructions, procedures, and drawings. QIs require a biennial functional area audit of design and configuration control to be performed by QA organization. Design control is also audited during audits of other functional areas such as fire protection, fuels, refueling operations, environmental protection, and protection and control. Activity audits of specific design and configuration control issues may be performed at any time. In addition, reviews of safety related and non safety related SSCs have been performed as part of audits and technical reviews. Also, Turkey Point procedures require that procedures and instructions (including those related to design and configuration control) be reviewed by QA for compliance with the TQAR, and other applicable industry standards and requirements.

TQR 18.0, "Audits," requires that QA Audit Findings be issued to the responsible management of the audited organization, who are required to correct the deficiencies identified in the audit report and take actions to prevent their recurrence. The status of corrective actions are tracked by QA until the corrective actions have been accomplished and verified.

NRC Request [b] **"Rationale for concluding that design bases requirements are translated into operating, maintenance, and testing procedures."**

Turkey Point Response

The discussion of the rationale for concluding that design bases requirements are translated into operating, maintenance, and testing procedures follows this outline.

1.0 Introduction

2.0 Turkey Point Programs Affecting Design Bases

- 2.1 Performance Enhancement Program (PEP)
  - 2.1.1 Procedure Upgrade Program (PUP) (PEP Project 3)
  - 2.1.2 Configuration Control Program (PEP Project 4)
  - 2.1.3 Upgrade of the Turkey Point Technical Specifications (PEP Project 10)
- 2.2 Design Basis Reconstitution Program
  - 2.2.1 Design Basis Document Development
  - 2.2.2 Design Basis Document Use and Maintenance

3.0 Recent Design Related Projects

- 3.1 Emergency Power System Upgrade Project (EPS)
- 3.2 Upgrade of the Turkey Point Technical Specifications (PEP Project 10)
- 3.3 Containment Isolation Design Basis
- 3.4 Setpoint Verification
- 3.5 Thermal Power Uprate
- 3.6 Emergency Operating Procedure Simulator Verification

4.0 Functional Review and Verification of Design Basis Translation into Procedures

- 4.1 Turkey Point Select System Review
- 4.2 Turkey Point SWSOPA
- 4.3 Quality Assurance (QA) Audits
- 4.4 Third Party Reviews
- 4.5 NRC Inspections

5.0 Conclusion

1.0 Introduction

The rationale for concluding that the Turkey Point design basis requirements are translated into plant procedures is based upon the following:

1. The design, procedures and plant modifications have been under procedural control since initial operation to assure that changes to the procedures, the design or to the FSAR are consistent. Procedural control has been further enhanced during the 1990s to resolve issues discovered during the 1980s.

2. The procedures were verified to be consistent with the plant design, the as-built plant and the FSAR as part of preparations for initial operation. The original design documents, the FSAR, and the Technical Specifications were used for initial system startup and testing. The design, construction and licensing review process and results from inspections and audits confirmed that the plant was built, began operation, and was controlled by procedures that reflected the plant as described in the FSAR and the design bases.

3. The design basis reconstitution resulted in design basis information and details being incorporated into the plant's operating procedures. The design basis document has been in place and maintained since the verification was conducted in the late 1980s.

4. Quality Assurance audits and NRC inspections continue to review the processes for maintaining procedural consistency and their level of effectiveness.

A detailed review of the Revised Technical Specifications which documented the implementing procedures for operations, maintenance, and testing has been incorporated into a matrix. The original verification of the matrix and the subsequent procedural control of the matrix ensures the incorporation of Technical Specifications requirements are reflected in the procedures.

The Procedure Upgrade Program (PUP) resulted in a complete rewrite of most Turkey Point procedures enhancing technical accuracy and availability of current design related information.

The FSAR is a document which describes the plant, its site, and how it functions. It is not intended as a compilation of the complete design bases for Turkey Point. The FSAR was produced as part of the original plant design process and received Atomic Energy Commission (AEC) review and approval. Technical Specifications (originally part of the FSAR) were developed in conjunction with the AEC review, and identified functional requirements, controlling parameters, surveillance and testing requirements that are significant to the safe operation of the plant.

Licensing and design reviews conducted in conjunction with the initial startup and testing of the plant, confirmed that the plant, as described in the FSAR, was appropriately translated into the original procedures. Since initial startup, there have been numerous audits and inspections by Quality Assurance, third parties and NRC which reviewed the agreement between the plant, as modified, and the procedures in use at the time of the reviews. These inspections and audits show

that the configuration control process has incorporated design basis changes resulting from plant modifications into the procedures.

A Performance Enhancement Program (PEP) included a procedure upgrade program, and a design basis reconstitution program as well as the other programs discussed below, further supports the rationale that the design basis requirements are translated into the operating, maintenance, and testing procedures. Projects have recently been implemented at Turkey Point which have served to verify that the configuration control process has been effective in maintaining the procedures. The Emergency Power Systems (EPS) project modified the emergency electrical distribution system at Turkey Point and the procedures controlling that system. The revised Technical Specifications resulted in a review and in many cases a rewrite of plant surveillance procedures. An FSAR self-assessment and operational review was conducted in 1995 and 1996, to identify inconsistencies between the plant operation and design and the description in the FSAR. The Thermal Power Uprate project resulted in a reanalysis of most of the accidents assumed in the FSAR and a subsequent reflection of the changes into the plant's procedures.

2.0 Turkey Point Programs Affecting Design Bases

The following projects support the rationale that the procedures reflect the design bases. The PEP resulted in a design reconstitution for selected systems which, during the Procedure Upgrade Program (PUP), was incorporated into approved plant procedures as appropriate. Another part of the PEP enhanced the configuration management by procedurally controlling many of the processes. The total revision of the Technical Specifications and the correlation of the procedures with the revised Technical Specifications during the pre-implementation phase ensured that procedures were in place to implement the revised Technical Specifications. The projects discussed below further enhance our conclusion that the Turkey Point design bases is current and that the procedures reflect those design bases by virtue of the processes described in the response to request [a] above.

2.1 Performance Enhancement Program (PEP)

As a result of various NRC inspections and an NRC Safety System Functional Inspection (SSI) of the Auxiliary Feedwater System, the NRC reached the conclusion that FPL had not given sufficient management attention to ensuring adherence to regulatory requirements for testing, surveillances, maintenance, and operating activities at Turkey Point. Turkey Point developed the PEP to not only address the NRC concerns but to additionally consider the improvements of many diverse Turkey Point controlling processes. The NRC issued Confirmatory Order EA 84-55, subsequently superseded by EA 86-20, requiring FPL to proceed with the PEP. In addition to a review of the plant against the FSAR, the following PEP projects were initiated which upgraded the configuration control processes:

- Project 3 - Turkey Point Procedure Upgrade Program (PUP).
- Project 4 - Turkey Point configuration control program.
- Project 10 - Implementation of Revised Technical Specifications.

2.1.1 Procedure Upgrade Program (PUP) (PEP Project 3)

PEP Project 3 was the Turkey Point PUP project developed to improve the existing procedures and to implement a more human factors oriented procedure format. Structured revision controls were implemented to assure technical accuracy with respect to system design bases and to assure compliance with Technical Specifications, technical standards, and NRC regulations. The updated controls and processes have continued to focus on procedure accuracy and usefulness. That focus provides assurance that the design basis is translated into Turkey Point procedures.

2.1.2 Configuration Control Program (PEP Project 4)

PEP Project 4 was designated to enhance the Turkey Point configuration control processes. The objective of this project was to implement a process to better manage the Plant Change and Modification (PC/M) process and control how procedures are changed to reflect the changes made in the plant. Thereby, the PC/M process has aided in the incorporation and control of design and document changes including assuring the transfer of design information into the appropriate procedures.

2.1.3 Upgrade of the Turkey Point Technical Specifications (PEP Project 10)

During the fall of 1986, FPL applied for a change to the Technical Specifications which upgraded the Technical Specifications to what was the current standard for the Technical Specifications for Westinghouse facilities. A detailed review and verification process for this PEP project resulted in approval of the new Technical Specifications and implementation in August of 1991. For more detail see section 3.2 of the response to this request.

2.2 Design Basis Reconstitution Program

In the middle 1980s, the PEP program was instituted to enhance the design bases to include a design basis reconstitution for the most important safety related and non-safety related systems. The program resulted in the development of the Design Basis Documents (DBDs) for selected systems and other licensing basis information. The objective of the DBD program was to satisfy commitments made to the NRC regarding Turkey Point configuration control and to provide a collation of the Turkey Point design basis information and a standard, well-defined, and controlled interpretation of the design bases for selected systems and licensing issues for Turkey Point.

2.2.1 Design Basis Document Development

A total of 18 systems, plus selected licensing issues, were selected for reconstitution of design bases. FPL retained Bechtel and Westinghouse to prepare the documents, and assigned scope based on their original plant design responsibility. The design basis document details and initial preparation responsibilities are listed in the response to request [c], section 2.4.1.

As a result of performing the DBD reconstitution, several procedure problems were identified. Two prominent items included discovery of procedures that allowed too much time without safety

injection flow during switchover to cold leg recirculation. Also, the DBD reconstitution found improper testing of the steam generator low-low level auto start relays for the Auxiliary Feedwater pumps. The only corrections needed were revisions to the procedures. These procedures changes were made in accordance with the procedure revision process.

The design basis reconstitution effort also discovered the residual heat removal (RHR) recirculation line was not designed to assure adequate flow for each of two pumps. This potential inadequate flow coupled with a single failure of the other operating RHR train could potentially have resulted a in complete loss of RHR pump capability. The recirculation flow path for the RHR pumps was an original design of the plant. Plant modifications, procedure changes and training were completed to resolve this discrepancy.

2.2.2 Design Basis Document Use and Maintenance

The design basis document provides a means for facilitating the search and retrieval of source documents. The document explains each system design and provides a definition of bases for the design, component design constraints, and design features for addressing selected licensing issues. The DBDs also provide a useful tool for design engineering to support plant modifications and operability evaluations.

Maintenance of the DBDs is performed within FPL's Engineering Department and is upheld as vital to assuring design and configuration control of the plants. The DBDs have enhanced the ability of personnel responsible for the transfer of design basis information into the procedures at Turkey Point, and to ensure the accuracy of the information in those procedures. Both the FSAR and the DBDs are essential in the design and design modification processes, since they provide a valid source of design basis information for translation into procedures. The DBDs are updated with approximately the same frequency as the FSAR.

3.0 Recent Design Related Projects

Each of the following projects reconstituted design basis information. The procedures that controlled the systems involved were revised to reflect the system and design changes. The processes described in response to request [a] ensured that the design characteristics were translated into the procedures.

3.1 Emergency Power System Upgrade Project (EPS)

In late 1985 and early 1986, issues with Emergency Diesel Generator (EDG) loading were reported by FPL (LER 250/85-042) and significant corrective actions commenced to correct this situation, including ultimately the implementation of the EPS enhancement project. The EPS project included the review and establishment of the design basis for the new emergency electrical distribution system and the installation of the new emergency diesel generators. The project established a new design baseline for these systems. Procedures were substantially revised to reflect the new system and its configuration.

3.2 Upgrade of the Turkey Point Technical Specifications (PEP Project 10)

During the fall of 1986, FPL applied for a change to the Technical Specifications which upgraded the Technical Specifications to what was the current standard for the Technical Specifications for Westinghouse facilities. A detailed review and verification process for this PEP project resulted in approval of the revised Technical Specifications and implementation in August of 1991. Prior to the transition from the original Technical Specifications to our current Technical Specifications, a line by line review was performed by licensing, operations and maintenance personnel, and a matrix was developed, and proceduralized (0-ADM-218) to document how the specifications were implemented in the plant procedures. The Technical Specification implementing procedure matrix development process identified areas that required procedure development to address new specifications. In areas where duplication existed in procedures, the matrix identified areas allowing the deletion of redundant procedures. Additionally, the matrix facilitates the identification of procedures in need of revision as the Technical Specifications are revised.

3.3 Containment Isolation Design Basis

In 1989, FPL identified discrepancies between the existing design basis documentation and the FSAR description of the features of each containment penetration. The description of the configuration of each of the penetrations and the valves which comprise the containment isolation function was documented. This penetration by penetration review effort was successful in reconciling the penetration configurations, DBD and FSAR, and revisions to the implementing procedures for operation, maintenance and testing of these penetrations.

3.4 Setpoint Verification

From 1991 to 1993, FPL performed an instrument setpoint review for the Turkey Point plant to document the current setpoints. This program incorporated the instrument setpoint change process into the configuration control processes and documented or recalculated instrument setpoints. Prior to this effort, instrument setpoint changes were governed by a separate procedural process.

In order to place these instrument setpoints under engineering control, in the configuration management process, an instrument setpoint list was prepared. The setpoint list contains both process units and the calibration units. In addition, any special maintenance requirements are noted. This list is a controlled engineering drawing that consolidates instrument setpoints (both safety related and non-safety related), with their vital performance characteristics and reference documentation into one document.

This setpoint effort provides a basis to conclude that the current plant setpoints are translated into plant documents and that the design bases for these setpoints are available.

3.5 Thermal Power Uprate

In December of 1995, FPL provided analyses to the NRC justifying an increased thermal power rating for Turkey Point Units 3 and 4 from 2200 Megawatts thermal to 2300 Megawatts thermal.

This resulted in numerous changes to the plant's design bases. The majority of the potential accidents discussed in Section 14 of the FSAR were reanalyzed. Major sections of the FSAR were revised and will be distributed in the near term. The DBD has also been revised. Technical Specification changes were approved by the NRC and implemented in the fall of 1996.

To implement the power uprate in 1996, many procedures were revised and instrument setpoints were changed to reflect the new design numbers.

3.6 Emergency Operating Procedure Simulator Verification

The plant reference simulator is a major contributor in the validation of the Turkey Point Emergency Operating Procedures (EOPs). This validation process is used to fine tune EOP revisions. The Training Department assists the Operations Department in validation of procedures by use during the simulator portion of Licensed Operator Continuing Training. The draft procedures are provided to Training by the Operations Department and the feed back from the crews in the simulator is forwarded to the Operations Department for consideration for inclusion into the procedures.

In early 1996, Engineering completed an electronic text search and review of the DBDs to verify that design information contained within the DBDs which identified the requirement for operating procedure controls had been correctly translated in plant procedures. Each identified procedural requirement was researched to identify the specific plant procedures that had been written or revised to contain the required information. In each reviewed case, the requirement to include design information in the appropriate procedure was met. This review provided reasonable assurance that this type of design information had been correctly incorporated into plant procedures including the EOPs.

4.0 Functional Review and Verification of Design Basis Translation into Procedures

4.1 Turkey Point Select System Review

During the late 1980s, the Safety Engineering Group (SEG)was involved in the select system review which was conducted on mitigating and support systems. The mission of the SEG group was to discover, assess and report conditions of nuclear safety significance including procedures, and to make recommendations for action to the cognizant disciplines, departments, or organizations. Recommendations resulting from these reviews included emphasis on accountabilities and management self-assessment. The SEG function is now met by QA and other Turkey Point nuclear organizations.

4.2 Turkey Point SWSOPA

A Service Water System Operational Performance Self-assessment (SWSOPA) was initiated by FPL at Turkey Point in 1995. This assessment identified two design basis related issues as Unresolved Assessment Questions (UAQ). Both issues related to the level of available documentation dealing with the initial plant design. Some procedures were enhanced and a new off-normal operating procedure was generated to better deal with influx of grass from the cooling

canal system. The level of documentation was considered to be typical for a plant licensed in the early 1970's. Well documented design features provided additional assurances that actual design deficiencies did not exist. Each of the UAQs was resolved.

The self-assessment final report was provided to the NRC in July of 1995, and a follow-up NRC inspection is currently scheduled for early February, 1997.

A conclusion of the self-assessment was that the Intake Cooling Water (ICW) and Component Cooling Water (CCW) operating, alarm response, off-normal, and emergency procedures were adequate in maintaining the system configuration and function.

4.3 Quality Assurance (QA) Audits

4.3.1 Engineering Design Audits

QA has conducted audits of procedures on a regular basis. The subject of many of the audits is the review of engineering design packages and how they control procedure changes. For example, an audit of a system includes a review of the recent significant modifications performed on the system, how the modification affects procedures, and how those procedure changes are controlled.

The rationale for concluding that design bases requirements are translated into operating, maintenance, and testing procedures is based upon multiple system reviews conducted by the QA Department since 1988.

Strengths

As part of system reviews by QA, the applicable FSAR sections, and if available, the DBDs were reviewed. The associated maintenance, operating, and test procedures and their records were also reviewed. Use of the procedures are often checked on a real time basis. Based upon these reviews, by and large, the procedures were found to be compatible with their FSAR/DBD descriptions and were also found functionally able to be implemented.

Weaknesses

Several findings were documented and/or CRs were issued as a result of audits with respect to translating design bases into procedures. They were considered minor in nature and did not affect the conclusions regarding strengths. Some of the examples included seismic boundaries indicated on drawings in the wrong location, FSAR setpoint note wording misleading, and FSAR wording still describing the operation of abandoned equipment.

Each of these deficiencies has been resolved. An abandoned equipment program is methodically removing the equipment form service using the PC/M process described in the response to request [a] above.

For details of these and other QA audits see Appendix B.

4.4 Third Party Reviews

4.4.1 Revised Technical Specification Review

A review was completed in 1991, by an independent contractor of the Technical Specifications surveillance requirements versus the implemented surveillance procedures. No substantive issues were found.

4.4.2 EPS Procedure Revisions and Reviews

During the EPS project, a contractor was designated to revise procedures being changed for the electrical modifications being made to the plant. The results of these revisions, the plant review of the revisions, and the many NRC inspections provide assurance that the transfer of the design information into the procedures was adequate.

4.4.3 Environmental Qualification Component Operability Analysis

During 1987 and 1988, an effort was undertaken to update and/or create detailed maintenance procedures for plant equipment at Turkey Point Units 3 and 4 that are required to be environmentally qualified per 10 CFR 50.49. This effort encompassed over 284 pieces of equipment and 81 procedures. The intent of this effort was to ascertain whether existing FPL procedures and programs were properly maintaining the EQ equipment in the correct condition. This verification effort was conducted in two phases.

The first phase was a detailed document review to establish the required installed condition for each type of equipment on the EQ List. This effort included the review of manufacturers' Vendor Manuals, Environmental Qualification Document Packages, FPL Maintenance Procedures, Vendor Technical Publications, NRC Notices and Letters, and NRC EQ Inspection Reports. As a result, the required installed configuration was determined. The required physical characteristics were captured on a field walkdown checklist which was used to verify the installed condition for each type of equipment. The review identified errors and inconsistencies among the various documents and procedures. These items were forwarded to the responsible departments at Turkey Point and corrective actions were completed.

The second phase of the program is discussed in section 4.2.1 of the response to request [c]. This phase was a comprehensive walkdown to check each piece of equipment against the requirements identified in the first phase.

4.5 NRC Inspections

The following list is not used as a primary source for providing rationale for concluding that design bases requirements are translated into operating, maintenance, and testing procedures. The list of NRC inspections in the area of design are provided here as a reference for docketed information on this subject.

4.5.1 EOP Simulator Verification

NRC inspection report NIR 89-53 included an NRC evaluation of selected EOPs on the simulator. Some weaknesses in the process of making transitions from one procedure to another during simulator training sessions were identified. Turkey Point has procedurally corrected these weaknesses. Overall, no violations or deviations were found.

4.5.2 DBD Inspection Results

The depth, breadth and quality of the DBD was noted by the design validation inspection team (NIR 89-203). Some weaknesses were noted in the area of the breadth of verification of the DBD and in errors found in the Component Design Requirements Documents (CDR) which are part of the DBD documentation. Some weaknesses were also found in some system procedures. The DBD documentation was enhanced as part of the final drafts of the DBD and procedures were revised to reflect the NRC noted weaknesses.

4.5.3 Turkey Point Design Basis Validation Inspection (Configuration Control Program, PEP 4, Inspection)

NIR 89-203, documents the NRC inspection conducted at Turkey Point which used the Safety System Functional Inspection (SSFI) format on three systems to review the implementation of the PEP actions. The focus of this portion of the inspection was on PEP Project 4 (Configuration Control Program). The inspection was conducted by performing SSFIs on reactor protection, component cooling and electrical distribution systems. The inspection team identified a number of concerns (some of which involved operating procedure documentation of valve lineups) which were resolved and closed in a later inspection report and several strengths which were attributed to the PEP.

The strengths identified in the area of plant modifications found that the more recent PC/Ms sampled were of generally high quality. The PC/Ms sampled were of a population that were generated after the implementation of the changes made by the PEP. The weaknesses were technical errors in some of the PC/Ms generated by Architect Engineers (A/E's). This was attributed to a lack of sufficient FPL technical oversight. The technical oversight of vendors has been strengthened since that inspection especially in the area of validation and verification.

4.5.4 NRC PEP Inspection Results

The overall PEP was closed by the NRC as part of the closure of NRC Confirmatory Order EA 86-20, on August 13, 1992. The NRC cited improved equipment reliability, effective quality and

safety assessment, and successful completion of and recovery from the dual-unit EPS modification project. The restart from the EPS project included a detailed restart evaluation of the facility prior to returning the units to power. This detailed evaluation of the configuration control process for the facility included the translation of design requirements into the plant procedures. The inspection aided in reaffirming that the design bases are reflected in the Turkey Point procedures.

4.5.5 SWSOPA NRC Inspections

An NRC inspection (NIR 95-08) of the SWSOPA was conducted in March, 1995 during the third week of the initial four-week inspection. This NRC inspection resulted in comments on the conduct of the self-assessment, and an extension of the self-assessment period to include CCW, but did not result in the identification of any procedure related violations or deviations. The FPL SWOPI Self-assessment final report was provided to the NRC in July of 1995, and a follow-up NRC inspection is currently scheduled for early February, 1997.

4.5.6 ISI/IST Inspection History

NRC inspection report 94-11, discussed an unresolved item dealing with an incorrect inservice inspection (ISI) of branch line connections to the reactor coolant system. The incorrect inspection of the branch line connection was discovered during a refueling outage by an ISI technician. Procedures controlling that test originally written by the A/E were revised and the inservice inspection was conducted correctly during the following refueling outage.

NRC inspection report 94-08, documents an NRC inspection in the areas of ISI and flow accelerated corrosion. The inspector determined that nondestructive test examiners conducted conservative exams in accordance with appropriate test procedures and that nondestructive examination procedures were good.

NRC inspection report 94-07, in part, covered the inservice testing (IST) program of main steam safety valves. The inspection findings included a procedural deficiency which did not direct personnel to use the CR process to resolve an issue such as a safety valve found to have failed ASME Section XI criteria. The inspector also noted that the procedures did not require the recording of a satisfactory or unsatisfactory test result. The procedures were revised to include the requirement to file a CR upon a Section XI failure and include the requirement to document the test result as satisfactory or unsatisfactory.

4.5.7 Integrated Inspection Reports

Two of the NRC inspections conducted during 1996 resulted in verification by the involved inspectors that, in those areas inspected, the FSAR wording was consistent with the observed plant practices and procedures (NIR 96-01 and 96-03). However, some minor inconsistencies were found during the NRC inspection as documented in NIR 96-04. These inconsistencies have either been resolved in the October 1996 update of the FSAR or will be included in the next regularly scheduled update.

5.0 Conclusion

There is adequate rationale for concluding with reasonable assurance that the operations, maintenance, and testing procedures at Turkey Point are consistent with the design and that discrepancies between design documents, the FSAR, procedures and the plant are not significant with respect to safety based upon the facts that:

- The verification at initial licensing of the plant, FSAR and the design are consistent.
- The processes in place assure that consistency is maintained.
- Various recent major modifications have aided in establishing a reconstituted bases for many plant systems and the translation of those bases into the procedures.
- The various audits, inspections, and self-assessments have verified consistency of design with the plant and its translation into the procedures.
- Processes have been and are in place for identification, evaluation and correction of discrepancies between the design and the plant procedures.

NRC Request [c] **"Rationale for concluding that system, structure, and component configuration and performance are consistent with the design bases."**

Turkey Point Response

The following outline provides the general organization of the response to the request.

1.0 Introduction

2.0 Design Basis Programs

- 2.1 Process Improvement Programs
- 2.2 Design Basis Reconstitution Program
- 2.3 Containment Isolation Documentation
- 2.4 Containment Structural Analysis
- 2.5 Motor Operated Valves (MOVs) GL 89-10
- 2.6 Surveillances

3.0 Recent Design Related Projects

- 3.1 Setpoint Program
- 3.2 Emergency Power System (EPS)
- 3.3 Revised Technical Specifications (RTS)
- 3.4 Thermal Power Uprate

4.0 Turkey Point Walkdowns

- 4.1 Programmatic Walkdowns
- 4.2 Special Walkdowns
- 4.3 Quality Assurance Audits/Technical Reviews
- 4.4 Third Party Reviews
- 4.5 Service Water System Operational Self-assessment (SWSOPA)
- 4.6 Select System Review
- 4.7 NRC Inspections

5.0 Conclusion

1.0 Introduction

The rationale for concluding that the Turkey Point system, structure, and component (SSC) configuration and performance is consistent with the design bases is based on the following:

1. The plant configuration was verified to be consistent with the plant design information and the FSAR as part of preparations for initial operation. The original design documents, the FSAR, and the Technical Specifications were used for initial system startup and testing. The design, construction and licensing review process and results from inspections and audits confirmed that the plant was built and began operation in the configuration that reflected the plant as described in the FSAR and the design bases.

2. The design, plant configuration and plant modifications have been under procedural control since initial operation to assure that changes to and operation of the plant are consistent with the design and the FSAR. As a result the identification for the need for increased management attention of configuration control processes, the PEP, discussed in the response to request [b], was implemented to enhance those processes.

3. Routine audits, inspections and vertical slice reviews have continued to confirm that the processes for maintaining consistency of both configuration and performance are effective.

4. Quality Assurance audits and NRC inspections follow the level of effectiveness of the processes for maintaining SSC consistency.

The original design process produced design documents such as drawings, specifications, evaluations, and analyses necessary to support construction, testing, operation and initial licensing of the plant. The design documents produced by this process were used as the bases for system startup and acceptance testing. The design and construction review process included various inspections, audits and documentation requirements to assure consistency between SSC construction and design.

The FSAR was produced as part of the original plant design process and submitted to the Atomic Energy Commission (AEC) for review and approval. The FSAR includes sufficient descriptions of the plant's design and procedures to document compliance with regulatory requirements and regulatory guidance. AEC review of the original FSAR resulted in numerous amendments prior to plant operation to document plant configuration. Technical Specifications were developed in conjunction with the AEC review, and identifies functional requirements, controlling parameters and surveillance and testing requirements that are significant to the safe operation of the plant.

A Performance Enhancement Program (PEP), which included a design basis reconstitution program as well as other programs discussed below, supports the rationale that system, structure, and component configuration and performance are consistent with the design bases.

A number of major projects have recently been implemented at Turkey Point which also have served to provide reasonable assurance that the configuration control process has been effective in maintaining the plant configuration in accordance with its design bases. The Emergency Power Systems (EPS) program modified the emergency electrical distribution system at Turkey Point. The revised Technical Specifications resulted in a review and in many cases a rewrite of many of the plant surveillance procedures to assure the operation of the facility in accordance with its design. The Thermal Power Uprate project resulted in a reanalysis of most of the accidents assumed in the FSAR and a subsequent reflection of the changes into the plant's configuration and operation.

In addition, since initial startup, there have been numerous audits and inspections by QA, NRC and third parties which have reviewed the agreement between the plant configuration, as modified, and the design bases at the time of the reviews. These inspections and audits have provided reasonable assurance that the configuration control process has incorporated design basis changes into the plant configuration and its operation.

2.0 Design Basis Programs

The following projects support the rationale that the plant configuration and operation reflect the design bases. The PEP resulted in a design reconstitution for selected systems which reflected the as-built plant and its design basis. Another part of the PEP enhanced the configuration control program by procedural control of many of the plant modification processes. The total revision of the Technical Specifications and the correlation of the procedures with the new Technical Specifications during the preimplementation phase, ensured that procedures were in place to assure correct operation of Turkey Point in accordance with the new Technical Specifications. The additional projects discussed below further enhance our conclusion that the Turkey Point design bases are current and that the configuration of the plant and its operation reflect that design bases. The plant configuration and the operation in accordance with the design is maintained by the configuration control processes described in the response to request [a] above.

2.1 Process Improvement Programs

2.1.1 Performance Enhancement Program

As a result of various inspections and a Safety System Functional Inspection (SSFI) of the Auxiliary Feedwater System which occurred during the mid 1980s, the NRC reached the conclusion that FPL had not given sufficient management attention to ensuring adherence to regulatory requirements for testing, surveillances, maintenance, and operating activities. FPL developed the PEP to not only address those issues but also additional programs to improve many Turkey Point processes. The NRC issued Confirmatory Order EA 84-55 subsequently superseded by EA 86-20, requiring FPL to proceed with the PEP. A review of the plant's configuration against the FSAR and the projects outlined below were beneficial to the processes which ensure the translation of the design basis into the SSCs.

- Project 4 - Turkey Point configuration control program.
- Project 10 - Implementation of the Revised Technical Specifications

As part of a later phase of the PEP, an assessment program was instituted to include design basis reconstitution of selected safety related and non-safety related systems and an assessment of the Configuration Control Program. Detailed inspections including system walkdowns, comprehensive reviews, and a Select System Review, were conducted on thirteen systems in the middle 1980s by the Safety Engineering Group (SEG).

2.1.2 Configuration Control Program (PEP Project 4)

PEP Project 4 was designed to enhance the Turkey Point configuration control program. The objective of this project was to implement a process to better manage the Plant Change and Modification (PC/M) process thereby preventing negative impact on plant safety or control. Changes to the configuration control process, and the implementation of the formal Engineering Package (EP) process, resulted in improvements to the design modification controls. The changes to the SSC design requirements are captured as part of the design change package. Responsible technical personnel review the impact of the design modifications on the SSC and take appropriate actions to update the configuration baseline. This process ensures that the performance requirements for the SSC reflect design changes made in a PC/M.

2.1.3 Implementation of the Revised Technical Specifications (PEP Project 10)

The revised Technical Specifications upgraded the Technical Specifications to what was the current standard for Westinghouse facilities. A detailed review and verification process for this PEP project resulted in approval of the new Technical Specifications and their implementation in August of 1991. For further details on the Revised Technical Specifications see section 3.3 of the response to this request.

2.2 Design Basis Reconstitution Program

In the middle 1980s, a PEP assessment program was instituted to enhance the design basis program to include a design basis reconstitution for selected systems. The product of this program was a Design Basis Document (DBD) for the selected systems and other licensing basis information.

The DBDs have enhanced access to the design basis information and assures that personnel responsible for the modification of Turkey Point SSCs have correct design basis information available for their use. This applies to both the modification of the SSC and the ultimate performance parameters of the SSC.

2.2.1 Design Basis Document (DBD) Development

Design basis documentation to support the Turkey Point configuration existed prior to the development of the DBD. However the information was not always readily retrievable and in

certain cases the information was not sufficient to provide a complete logic trail to explain the configuration. The use and application of the information depended on case by case interpretation. The design basis reconstitution program consisted of establishing from existing source documents the design requirements for the SSCs.

A total of 18 systems, plus selected licensing issues, were chosen for the reconstitution of design bases. Bechtel (B) and Westinghouse (W) prepared the DBDs. The design basis documents and initial preparation responsibilities are listed below:

Auxiliary Feedwater System (B)
Chemical and Volume Control System (W)
Component Cooling Water System (W)
Containment Isolation Features(B)
Containment Spray System (W)
Emergency AC Power (B)
Instrument Air System (B)
Intake Cooling Water System (B)
Area Radiation Monitoring System (B)
Process Radiation Monitoring System (B)
Reactor Protection System (W)
Residual Heat Removal System (W)
Safety Injection System (W)
Vital AC/DC System (B)
Emergency Containment Coolers (B)
Emergency Containment Filters (B)
Main Steam Isolation Valve Assemblies (B)
Normal Containment Coolers (B)
Selected Licensing Issues (B)

The design basis documents were prepared and issued under the auspices of the FPL QA Program. Each document had a preparer, verifier and approval from the respective organization project team. The design basis documents for systems addressed the system scope, basic and performance functions, safety classifications, external influences and interfaces, configuration development history, licensing commitments, and calculation summaries. The selected licensing issues addressed design history and design basis positions.

Each specific design basis is presented. To the extent possible, the design basis is a direct quote from the source document. If further clarification is needed, a second paragraph (distinguished from the design basis quote) is included to provide an interpretation.

There were some cases where a design basis was clearly needed to explain a particular function or design constraint, but no documented evidence was found. In such cases, a design basis has been developed and "assigned" to the design basis document. Development of design bases required particular care to assure that current design codes, standards and practices were not being presumed. The development basis has included related documents and existing plant conditions

as supporting evidence, and coordination with "vintage" design engineers where practical to assure a proper perspective.

Engineering is the primary user of the DBD for 10 CFR 50.59 safety evaluations, and modifications. However, other personnel also use the DBD, particularly for evaluating components out-of-service, system or component operability and proposed changes in methods of plant operation. Before issuing the DBD as a final document, each was issued for trial-use, during which period the various departments provided review, assessment of usefulness and comments on content.

The design basis reconstitution program resulted in establishing SSC configuration and performance requirements which are reflected in the configuration documentation. The maintenance of the DBDs to a current status is controlled by the processes described in the response to request [a] above.

The DBD review process identified some reportable conditions. In May of 1987, the design basis reconstitution process found a discrepancy in design flow rates for the containment spray pumps. The system piping resistance was such that pump runout flow would exist. The flow restricting orifices assumed in the calculation were not installed in the field nor were they found on the system documentation. Both units were shut down at the time of the discovery and the flow orifices were installed.

The design basis reconstitution effort also discovered the residual heat removal (RHR) recirculation line was not designed to assure adequate flow for each of two pumps. This potential deficiency coupled with a single failure of the other operating RHR train could have potentially resulted in a complete loss of RHR pump capability. The recirculation flow path for the RHR pumps was an original design of the plant. Plant modifications were completed on both units to correct the configuration discrepancy.

2.2.2 Turkey Point DBD Program Comparison to NUMARC 90-12

NUMARC 90-12, Design Basis Program Guidelines, was issued after the Turkey Point design basis reconstitution program was under way. It is evident from review of NUMARC 90-12, and from NRC input during NRC inspection NIR 89-203, that the Turkey Point program substantially followed the NUMARC 90-12 guidelines and recommendations. Therefore, the Turkey Point program is generally consistent with the overall guidelines as well as many of the specific recommendations and applications.

Most of the Turkey Point plant-specific design basis information is contained in calculations, the FSAR, specifications and correspondence. This information is available in microfilm records. As such, this information was reviewed and collated to support design basis document preparation for the selected systems and issues.

Turkey Point has prepared design basis documents the most important selected systems, but not all plant systems. The initial reason was that one of the systems, auxiliary feedwater, was the focus of Safety System Functional Inspection (SSFI) in 1985. Issues raised during that SSFI lead

to considering intake cooling water and other selected systems with high maintenance histories and functional problems having potentially significant consequences in terms of nuclear safety. However, further consideration of the system scope confirmed that design basis documents included those systems with the highest risk significance.

Design basis information is readily available for use while developing new or revised procedures and for design modifications to plant structure, system and component modifications. The design basis documents were developed on a programmatic basis, and facilitate design and operability evaluations for systems and components having high safety risk significance. For lower-risk systems, more research and evaluation effort is required to reconstitute design basis information and is handled on a case-by-case basis. The procedures governing plant changes or modifications, calculations, evaluations, nonconformances and condition reports assure that the appropriate levels of documentation and verification are performed, such as the reconstitution of the design basis if necessary.

2.3 Containment Isolation Documentation

In 1989, FPL identified discrepancies between the design basis documentation and the FSAR description of the features of each containment penetration. A substantial effort was made to define the configuration of each of the penetrations and the valves which comprise the containment isolation function. This effort was successful in defining the penetration configurations and effective in establishing the configuration baseline and assuring the consistency between the design basis and the documentation of that basis within the FSAR and the DBD.

2.4 Containment Structural Analysis

In 1993, Turkey Point reanalyzed the containment structure and applied to the NRC for a license amendment to revised the licenced design basis pressure for the containment. This amendment (approved by the NRC in 1994) required the translation of many of the design basis numbers into documents affected by the change using the processes described in the response to request [a].

2.5 Motor Operated Valves (MOVs) GL 89-10

In response to Generic Letter 89-10, FPL developed a Motor Operated Valve (MOV) program. FPL identified 111 valves at Turkey Point that were included in the program. Design basis reviews were completed in the following areas:

- Differential pressure determination
- Voltage drop calculations.
- Thermal overload heater sizing
- MOV sizing and switch settings

Turkey Point addressed the design basis differential pressure for both the open and closed valve direction to determine the maximum expected differential pressure for each MOV. Fluid medium, temperature, and flow were specified for the design basis condition and were included in the review to help determine the design basis differential pressure. Turkey Point reviewed the FSAR,

DBDs, plant normal, off-normal and emergency operating procedures, plant drawings, system descriptions, the computer data base containing design information, plant MOV walkdown data, and environmental qualification document packages to ensure that the maximum expected differential pressure was accurate. Each of the issues were addressed to the same detail as differential pressure. In each case the configuration was found acceptable or the installed configuration was changed to meet the design criteria for each MOV in the program.

This process resulted in the establishment of a documented design basis for each of the valves in the program. The FSAR or DBDs were revised to capture this new valve design basis information.

2.6 Surveillances

Surveillance testing provides a means to verify the operability of systems and components and ensure variables are within specified design and licensing bases limits. Surveillance requirements are obtained from Technical Specifications, ASME Boiler and Pressure Vessel Code, Section XI Pump and Valve program, Inservice Inspection (ISI)/Inservice Testing (IST) requirements, and other criteria specified by management. Processes are in place to assure failed or missed surveillances are appropriately evaluated for reportability and corrective actions are implemented if necessary. These processes are discussed in the responses to requests [a] and [d].

Just prior to the transition from the original Technical Specifications to the current Technical Specifications, a line by line review was performed by licensing, operations and maintenance personnel and a matrix was developed and proceduralized to show each specification was procedurally implemented. This review and matrix were used to ensure that procedures were in place to address each item of the Technical Specifications and that the equipment required to be tested under each surveillance requirement was tested as required.

3.0 Recent Design Related Projects

Each of the following projects reconstituted design basis information as part of the project. The configuration of systems involved were reviewed to ensure that each system reflected the design bases and was operated in accordance with its design basis. The processes described in response to request [a] ensure that the translation of those design characteristics into the plant systems and their operation is accomplished in accordance with their design.

3.1 Setpoint Program

The details of this program are described in the response to question [b]. The setpoint documents were developed with the intent to document the setpoint basis for determining correct system or component performance. The setpoint program provides a basis for the conclusion that the current plant setpoints are correctly translated into plant procedures, available for review by engineers planning modifications to the facility and therefore correctly reflected in the PC/M packages. The effort assures that the setpoints used in maintenance and operations functional tests incorporate the correct values and are documented properly for each SSC.

3.2 Emergency Power System (EPS)

In late 1985 and early 1986, issues with Emergency Diesel Generator (EDG) loading were reported by FPL and significant corrective actions commenced to correct this situation, including ultimately the implementation of the EPS enhancement project. Significant FPL resources were expended reconstituting and redesigning portions of the plant's electrical distribution system. The project was completed in 1991 at the end of a dual unit outage. The restart from the EPS project included a restart evaluation of the facility prior to returning the units to power. The project included a detailed evaluation of the configuration baseline of the emergency electrical distribution system for the facility ensuring that the new designs and system requirements had been correctly reflected in the new installation and its documentation.

3.3 Revised Technical Specifications (RTS)

During the fall of 1986, FPL applied for a change to the Technical Specifications which upgraded the specifications to what was at the time an adaptation of the current standard for the Technical Specifications for Westinghouse facilities. A detailed review and verification process for this PEP project resulted in approval of the new Technical Specifications and implementation in August of 1991.

During the process of developing the justification for the changes to the Technical Specifications, a number of analyses were performed which reestablished the basis for various Technical Specification requirements on plant systems, structures and components.

See the response to request [b] above for the discussion of the development of a Technical Specification surveillance matrix to assure the Technical Specification required testing and surveillances are completed on the SSCs of the plant. These new surveillances enhanced the ability of Turkey Point to assure the operation of the SSCs involved is in accordance with their performance requirements

3.4 Thermal Power Uprate

In December of 1995, FPL provided analyses to the NRC to justify an increased thermal power rating for Turkey Point Units 3 and 4 from 2200 Megawatts thermal to 2300 Megawatts thermal. This resulted in numerous changes to the plant's design bases. This amendment request included an engineering evaluation to justify the proposed changes. The majority of the potential accidents discussed in Section 14 of the FSAR were reanalyzed. Major sections of the FSAR were revised and will be distributed in the near term. The DBDs are being revised. Technical Specification changes were approved by the NRC in mid 1996, and implemented in the fall of 1996.

To implement the thermal power uprate in 1996, some minor modifications were implemented such as increasing the size of the tail pipes on the main steam safety valves. Additionally, component cooling water system as well as containment integrity analyses were completed for this evolution. This extensive analyses work has provided an opportunity for Turkey Point to reestablish a baseline for many of the analyses which appear in Section 14 of the FSAR.

4.0 Turkey Point Walkdowns

Walkdowns are an integral part of the continual identification of SSC conformance with the design bases of the plant. Most of Turkey Point walkdowns are programmatic, however some special walkdowns have been required by generic NRC correspondence.

4.1 Programmatic Walkdowns

The programmatic walkdowns include those accomplished during normal operation of the facility, scheduled audits of the facility by QA, system walkdowns by each system engineer, walkdowns of systems or components during maintenance planning or testing, and walkdowns performed by plant management.

4.1.1 Operator Rounds

Operator rounds are conducted to ensure that systems are operating as expected. During these rounds, data are collected which document the status of various parameters which reflect the operation of the monitored equipment. By evaluation of the data, both on a point by point basis as well as evaluations of trends, Turkey Point can determine if the equipment is operating in accordance with the design bases. Operator rounds at Turkey Point are computer aided to provide the operator with more specific plant information. The real time information capability afforded by the computerized log keeping, aids in ensuring the accurate reflection of the design bases in plant operations.

4.1.2 Quality Assurance Walkdowns

QA performs system walkdowns under two plans, during a periodic safety related flowpath verification, and as part of system audits and reviews. For the walkdowns, both the applicable operating procedure(s) and drawing(s) are used to verify valve and breaker alignment.

The scheduling of the walkdowns is determined by the QA Supervisor. Presently, the frequency for the safety related flowpath verification walkdowns is monthly. System reviews are performed with the objective of covering a mixture of safety related, quality related, and non-safety related systems every few years with most of the reviews on the safety related systems. The walkdowns during system reviews have been on-going for about eight years. These walkdowns have been supplemented by the periodic safety related flowpath verifications for about the past two years.

Although these QA walkdowns have identified minor deviations, the conclusion is that good configuration and design control was being maintained.

4.1.3 System Engineer Walkdowns

System engineers and component engineers are required to perform walkdowns of their systems on a regular basis. Direction for walkdowns are provided by procedure. Engineering Department instructions for component and system walkdowns provide specific details on how to perform walkdowns. The procedure applies to 46 systems.

Turkey Point has recently categorized systems based upon risk significance in accordance with the maintenance rule. These systems require the generation of a monthly walkdown report. All other systems require a quarterly report. The procedures require specific inspections to monitor changes that affect piping degradation on mechanical systems (flow accelerated corrosion) and specific inspections that may be needed on some electrical systems. As a result of seismic considerations, a walkdown of each system for structural degradation and degradation of environmental coatings is required. Each quarter the system engineer is instructed to have one of the following individuals join the walkdown; system engineer supervisor, civil engineer, maintenance department supervision or operations department supervision. If inconsistencies are found they are typically documented by use of the CR process.

4.1.4 Management Walkdowns

Turkey Point has instituted, as part of the culture of the plant, a number of management walkdowns. The Plant General Manager periodically designates a specific area, system or set of components to be walked down by the upper management of the plant. Additionally, the material condition of the facility is monitored by cleanliness tours conducted by management personnel bimonthly. Off hours tours are conducted at random by upper management once each month. Most of these walkdowns are documented and condition reports or other corrective actions are implemented and tracked to completion by the Plant Manager Action Item (PMAI) system.

4.2 Special Walkdowns

4.2.1 Environmental Qualification (EQ) Walkdowns

During the late 1980's the second phase for EQ was composed of walkdowns performed for verification of the environmental qualification of various equipment in the plant in accordance with 10 CFR 50.49. One output of the review was the determination of the required installed configuration. The required physical characteristics were captured on a field walkdown checklist which was used to verify the installed condition for each type of equipment. Unit 4 walkdowns identified numerous deficiencies, many of them common to several components. The Unit 3 walkdown resulted in similar findings and provided reasonable assurance that there were no other generic discrepancies. The EQ equipment discrepancies identified during the walkdowns were documented on discrepant field condition reports. Engineering resolutions were provided on NCRs and repairs made where necessary. Reinspection of the equipment was performed by FPL QA personnel and a member of the EQ walkdown team to ensure satisfactory resolution of configuration or performance deficiencies. See section 4.4.3 in the response to request [b] for a detailed discussion of the first phase of the EQ component analysis.

4.2.2 Bulletin 79-14 Walkdowns

In response to IE Bulletin 79-14, Turkey Point implemented a program to reassess the piping support systems for large bore safety-related systems. As an extension to the project, walkdowns were performed for important safety-related small bore piping systems to confirm the acceptability of support system design and installation. Some discrepancies were identified and resolved by calculation or hardware modification.

4.3 Quality Assurance Audits/Technical Reviews

QA has conducted performance monitoring audits of systems and components on a regular basis. The subject of many of the audits is the review of engineering design packages and how they control SSC changes. For example, an audit of a system includes a review of the recent significant modifications performed on the system and how the modification configuration and performance characteristics are controlled.

The additional reviews conducted by QA enhance the rationale for concluding that SSC configuration and performance are consistent with the design bases. Multiple QA system reviews have been conducted since 1988. For administrative efficiency QA now performs technical reviews of system and components on a regular basis and reports the results to management by Quality Reports.

Strengths

As part of the system reviews, the FSAR applicable sections and DBDs, if applicable, were reviewed. Systems were walked down using drawings and procedures to ensure the fidelity of the systems. Clearances and temporary system alterations in effect were reviewed to ensure design bases were not adversely affected. Additional strengths that facilitate walkdowns are the good system labeling of equipment and identification tags on valves.

Weaknesses

Several findings/CRs or comments were documented in reports and audits with respect to maintaining design bases of SSCs. They were considered minor in nature and did not affect conclusions regarding strengths. Some examples are:

One report identified that a seismic anchor for the boric acid supply piping had been removed without prior evaluation of its seismic affect. The anchor removed was from a boron injection tank recirculation pump that was awaiting formal abandonment. A condition report was written by the system engineer. An evaluation determined that no operability concern existed.

An audit found that the capability to operate the gas analyzer sample valve for the pressurizer relief tank was not indicated on the system drawings or in the FSAR. Engineering has since revised system drawings and the FSAR to reflect this function.

An electrical drawing for the containment spray reset buttons was found to be incorrect. A switch replacement could have resulted in an incorrect wiring configuration. A drawing change was made.

For details of these and other QA audits see Appendix B.

4.4 Third Party Reviews

An audit was conducted in 1991 by an independent contractor of the Turkey Point compliance with Reg Guide 1.97. Some inconsistencies were found. A PC/M was issued to resolve those inconsistencies.

4.5 Service Water System Operational Self-assessment (SWSOPA)

A SWSOPA was initiated by FPL at Turkey Point in 1995. Details of this assessment and its findings are discussed in the response to question [b]. The use of the SWSOPA temporary instruction aided FPL in assuring that, the ICW system at Turkey Point was being operated and was performing in accordance with the design bases.

4.6 Select System Review

The select system review was conducted in the middle 1980s by the Safety Engineering Group (SEG). These systems were categorized as mitigation systems and support systems. Thirteen of the systems included in the design basis reconstitution program were included in this program with the following four elements being implemented.

- Reconstitution of design basis
- Comprehensive review by SEG
- Plant walkdowns
- Configuration management program review

An expansion of the SSR was a systematic design investigation. This was considered a strength by an NRC inspection team. The systematic design investigation provided a risk based method for setting priorities for the resolution of technical concerns which resulted from the DBD reconstitution project. The concerns found during the investigation were dealt with in an order which reflected the safety significance and risk of each of the items. The conclusions reached by the SSR were that the systems were being operated in accordance with their design basis.

4.7 NRC Inspections

Both FPL and NRC have performed "vertical slice" audits of systems to confirm the adequacy and completeness of design basis information related to Turkey Point. These audits include, but are not limited to; the auxiliary feedwater SSFI by NRC, NRC audit of the Design Basis Program, multiple inspections during the EPS upgrade, and the SWSOPA in process inspection by NRC. The following list includes examples of NRC inspections in the area of design which support the conclusion that design bases requirements are translated into operating, maintenance, and testing procedures.

4.7.1 Auxiliary Feed Water SSFI

The earliest of these audits was the NRC SSFI of the AFW system conducted in 1985 by the NRC. This audit clearly identified concerns related to how design basis information was

maintained and focused on understanding design bases. Corrective actions from this audit were sweeping in nature and impacted every area of plant operations. Specific concerns related to AFW design were addressed, corrected, and incorporated into the DBDs. This SSFI lead to the implementation of the PEP.

4.7.2 Motor Operated Valves (MOVs)

NRC inspection reports 92-08 and 93-25 document the Phase I and II inspections conducted by the NRC on Generic Letter 89-10 issues. The concerns identified were that acceptance criteria needed to be enhanced in the testing procedures. Documentation to support MOV brake operation during degraded voltage needed to be upgraded. Turkey Point needed to evaluate load sensitive behavior margins for dynamically tested MOVs and to provide guidelines to account for torque switch repeatability and other uncertainties in the calculations. Each of these concerns was addressed and resolved.

The NRC also noted a number of strengths in the program some of which were; prioritization was given to high DP/low margin MOVs for aggressive differential pressure testing; performance of multiple differential testing was done to justify extrapolation methodology; pressure transducers were used both up and down stream to capture time dependent pressure variation. These program strengths aid in ensuring that the design basis for each of the MOVs is reflected in the installed configuration.

An additional NRC inspection in this area is tentatively scheduled for the spring of 1997.

4.7.3 DBD Inspection

The Turkey Point Design Basis Validation Inspection (NRC NIR 89-203) was performed as a series of SSFIs on the Reactor Protection System (RPS), the Component Cooling Water (CCW) system, and on the Electrical Distribution System (EDS). In general, the NRC cited the depth, breadth, and quality of the system DBDs, finding them useful and well researched. On the other hand, the depth of verification of the DBDs was identified as a concern, the component level DBDs were found to have errors, and the correctness of certain calculations was questioned. FPL corrected the identified information deficiencies in the component DBDs, enhanced the verification of the component DBDs, and instituted improvements in the calculation process, including retrieval and indexing of Turkey Point and vendor calculations in PassPort. See the discussion in the response to request [b] section 2.2.1, for more details on the PassPort system.

4.7.4 EPS Inspections

Because Turkey Point has implemented the Emergency Power System (EPS) Enhancement Project, significant NRC and FPL resources have been expended reconstituting and redesigning portions of the plant's electrical distribution system. Again, based on the significant number of inspections performed as part of this project, FPL demonstrated that an Electrical Distribution System Functional Inspection (EDSFI) had essentially been completed at Turkey Point. The NRC did not conduct a specific EDSFI at Turkey Point.

4.7.5 SWSOPA In-process Inspection

A SWSOPA was initiated by FPL in 1995 and an in-process NRC inspection was conducted during the self-assessment.

The inspection team found that the depth and scope of the self-assessment was lacking in some areas. As a result FPL extended the length of the self-assessment to envelope the required scope and depth.

The self-assessment report was issued in mid 1995. The self-assessment concluded that the ICW and CCW meet their thermal and hydraulic performance requirements. The design change process adequately maintains the design basis and drawings reflect the as-constructed configuration. Single failure analyses demonstrate that no credible active component failure would prevent the systems from performing their design function. A follow-up NRC inspection is scheduled for Turkey Point in early February 1997.

5.0 Conclusion

There is adequate rationale for concluding with reasonable assurance that the systems, structures and components are consistent with the design and that discrepancies between design documents, the FSAR and procedures and the plant are not significant with respect to safety, based upon following:

- The verification at initial licensing that the plant, FSAR and the design are consistent.
- The processes in place assure the maintenance of that consistency.
- Various recent major modifications have aided in establishing a reconstituted bases for configuration and performance requirements on many plant systems.
- The various audits and inspections have verified consistency of design and the plant.
- Processes have been and are in place for identification, evaluation and correction of discrepancies between the design and the plant systems, structures and components.

NRC Request [d] **"Processes for identification of problems and implementation of corrective actions, including actions to determine the extent of problems, action to prevent recurrence and reporting to NRC."**

Turkey Point Response

The following outline provides the organization of the response to request [d]:

1.0 Introduction - Background

2.0 Problem Identification Processes

- 2.1 Operator Rounds
- 2.2 Walkdowns
- 2.3 Operating Experience Feedback (OEF) /Generic Implications
- 2.4 Management Self-assessment
- 2.5 Quality Assurance (QA) Audit Programs
- 2.6 Nuclear Safety Speakout (SPEAKOUT)

3.0 Corrective Action Programs

- 3.1 Historical Discussion
- 3.2 Quality Instructions (QIs)
- 3.3 Condition Reporting (CR) System
- 3.4 Event Response Teams
- 3.5 Commitment and Corrective Actions Tracking (CTRAC) Systems
- 3.6 Change Request Notices (CRN)
- 3.7 Nonconformances (NCRs)
- 3.8 10 CFR Part 21/Significant Safety Hazard Evaluations
- 3.9 Operability Determination
- 3.10 10 CFR 50.72 and 50.73 Reportability Determination
- 3.11 Corrective Action Program Training

4.0 NRC/Turkey Point Interfaces

1.0 Introduction - Background

The Plant General Manager is responsible for the overall implementation of the programs described in this response. Operations personnel are responsible for operating the plant in accordance with the design bases, Technical Specifications and the applicable regulations.

Along with a questioning attitude exhibited by plant personnel and the identification of issues during routine work, Turkey Point has many programs which are designed to identify issues needing resolution. Examples which are discussed in this response are, operator rounds, programmatic and special walkdowns, Operating Experience Feedback, management self-assessments, the QA program, the Condition Report process, and Nuclear Safety Speakout.

Conditions found may be documented by any employee, permanent or temporary, on a Condition Report (CR). After review by the Nuclear Plant Supervisor and the Plant General Manager, the CR program is administered by the Engineering organization. The corrective actions identified in the resolution to each CR are tracked by personnel reporting to the Plant General Manager.

Root causes are typically determined by Engineering personnel with the aid of cognizant personnel from the Maintenance, Operations, Health Physics, Chemistry, Reactor Engineering or other disciplines as required.

If any operability or reportability issues arise that must be resolved in a short time defined by the Technical Specifications, or Federal Code, the Nuclear Plant Supervisor and the on shift operations staff are authorized and required to make those determinations and follow the applicable procedures to resolution. For those conditions which are of a nature which allow or require more detailed evaluation, the Engineering staff aids in the determination of operability and the Licensing staff aids in the determination of reportability.

2.0 Problem Identification Processes

2.1 Operator Rounds

Operator rounds are required by procedure. The procedure in some cases implements the requirements of Technical Specifications and is a reflection of management expectations for the operator to keep abreast of the operation of the equipment in the plant.

Operator rounds use a computerized data logger to provide the operator with more plant specific information. This information is useful in documenting plant status and is more user friendly than the previous hard copy logs. The computer provides the operator with minimum and maximum values associated with equipment performance. It also has Technical Specification information, trending capabilities, and does not allow the operator to exit the program until the rounds have been completed. The availability of the information in the computerized data set simplifies the identification of an abnormal condition and provides a more efficient means for supervisor review. The plant procedures provide a broad scope of the requirements, and specific departmental instructions were developed to govern the aspects of each watch station. Satisfactory completion of a set of rounds on a particular watch station in accordance with these instructions (under the

surveillance of a supervisor) is a requirement of qualifying on a watch station. The instructions are periodically used as a monitoring tool by management to insure that the rounds are performed in accordance with their expectations. The rounds help to identify and correct conditions prior to them becoming problems. Plant work orders are generated for any deficiencies, condition reports are generated for anything outside the work order process.

2.2 Walkdowns

System engineers and component engineers are required to perform walkdowns of their systems on a regular basis. Directions for walkdowns are provided by procedure. Engineering Department instructions are in place for walkdowns of components and systems. See section 4.0 in the response to question [c] for more details on programmatic and special walkdowns. If non-conforming conditions are found, the CR system may be used to document the condition and provide a platform for the correction of the condition.

2.3 Operating Experience Feedback (OEF) /Generic Implications

Industry events and reports are reviewed and processed based on applicability to Turkey Point in accordance with administrative procedures. Industry events and reports are reviewed by the OEF coordinator and processed based on potential generic applicability to Turkey Point in accordance with administrative procedure 0-ADM-515. Industry event reports screened by the OEF Coordinator include:

NRC Generic Letters (GLs)
NRC Information Notices (INs)
NRC Daily Event Reports
NRC Press Releases (PRs)
INPO Significant Operating Experience Reports (SOERs)
INPO Significant Event Reports
INPO Significant Event Notifications (SENs)
INPO Significant by Others reports (SOs)
INPO Operations and Maintenance Reminders (O&MRs)
INPO Operating Experience reports (OEs)
Westinghouse, General Electric and Combustion Engineering Vendor and Technical Reports

Operating experience items which merit analysis, specific actions or a thorough, documented plant review or response, are processed as CRs. Implementation of the CR process ensures that a thorough evaluation and analysis of the event or report is made and that the plant's response (if applicable) adequately addresses the concerns. If an update to the plant's design bases documents are required in response to the operating event, it will be identified and implemented through the CR process using the appropriate engineering processes.

Problems identified in house and through the OEF program are compared to the processes used in the plant procedures. Where identified enhancements or changes would benefit the plant or mitigate the consequences of an event, procedure/process changes are made as necessary. One of

the OEF goals, when providing industry information to plant personnel, is to aid in the maintenance of the procedures, such that the potential for the introduction of a step which could initiate an event is minimized during the development or change process of a procedure. The OEF program is just one of several programs that provides a measure of how well the lessons learned are incorporated from both the experience of others and ourselves. Another program is the use of the simulator to validate selected procedures such as Emergency Operating Procedures (described in section 3.6 of response [b]). This validation helps to ensure that problems have not been written into the procedures and allows for the testing of ideas if it is believed that there is a better way to perform a task.

In-house events are screened for inclusion in the OEF program by review of plant CRs. Violations which have been cited at other licensees are reviewed on a periodic basis for applicability to Turkey Point. Contractors that have compiled docketed information and internal as well as generic communications from the NRC have been retained by FPL. This body of information is available in an electronically searchable format, and aids in the timely review of information potentially applicable to Turkey Point. Recent access via the Internet has made these documents in many cases available to FPL on the same day as released to the industry by the NRC.

2.4 Management Self-assessment

Turkey Point departments have a series of formal and informal programs which provide for self-assessment.

The self-assessment processes used at Turkey Point include:

Post Outage Assessments
Post Trip Reviews
Off Hours Tours
Training Observations
PWO Feedback Forms
Cleanliness Walkdowns
Plant Manager's Walkdown
Event Response Teams
Condition Report System Trending
Quarterly Trend Analysis

Each of these processes provide the opportunity to identify procedure, design or configuration issues in need of resolution.

2.5 Quality Assurance (QA) Audit Programs

The QA organization at Turkey Point is an independent organization reporting through an offsite Director directly to the President of the Nuclear Division. QA has a program of audits which are required by procedure and they also conduct audits at the request of the CNRB and upper Nuclear Division management. Many of the CNRB requested audits are required by Technical

Specifications. The findings and recommended corrective actions are documented by the generation of a CR for each item, as well as in the QA audit files. (Also see discussion in the response to request [a], section 6.0, on the Topical Quality Assurance Report (TQAR) Section 18.0 requirements for audits.)

2.6 Nuclear Safety Speakout (SPEAKOUT)

The SPEAKOUT program is a separate reporting process for identification of concerns which may be used by personnel wishing to remain anonymous or used as a method which does not require the normal chain of command reporting process. This program is designed to maintain anonymity while seeking causes and corrective actions for the identified issues. A designated committee reviews SPEAKOUT issues for thoroughness of investigation, documentation and corrective actions. Summary reports on each issue are returned to the identifying individual for their information.

3.0 Corrective Action Programs

3.1 Historical Discussion

The TQAR for Turkey Point is the top tier document (approved by the NRC) which defines the QA program. The TQAR is written such that the numbering and topic of each section matches that of 10 CFR 50, Appendix B. The basic requirements for corrective action processes are described in the following Topical Quality Reports (TQRs):

TQR 15.0: Nonconforming Materials, Parts, or Components

This TQR requires that measures be established to control nonconforming items to prevent them from being installed or used. These measures also are required to provide for the disposition of the nonconforming conditions.

TQR 16.0: Corrective Action

This TQR requires that measures be established to ensure that conditions adverse to quality are promptly identified and corrected. Additionally, if the condition is significant, the cause is determined, and actions are taken to prevent recurrence, and results are reported to appropriate managers.

TQR 18.0: Audits

This TQR requires the conduct of a comprehensive system of planned and period audits of the quality assurance program and to determine the effectiveness of the program. Audit results are reviewed by the audited management and subsequently by the Company Nuclear Review Board.

3.2 Quality Instructions

The Engineering QIs implement the requirements of the TQAR. The overall method and process for addressing corrective action, as required by Criterion XVI of 10 CFR 50 Appendix B has historically been controlled by plant management, with engineering providing input into the decision process when needed. However, Turkey Point has always maintained a process for dealing with internally identified concerns. Traditionally, issues are to be brought up through management, up to and including the President Nuclear Division. This process is progressive, and the individual may continue up this chain if satisfactory action is not taken on an individual concern. This process is supplemented by the Nuclear Safety SPEAKOUT program which provides a mechanism for anonymously identifying concerns. See section 2.6 of this response for further details on SPEAKOUT.

3.3 Condition Reporting (CR) System

Prior to 1992, Turkey Point had many problem reporting and resolution systems in place. They were in most cases department or process dependent. In 1992, most were consolidated into the CR process.

The CR process is controlled by an administrative procedure (ADM-518, Condition Reports). The process is now designed for use throughout the Nuclear Division, although each plant has its own implementing procedure. The system is also designed to have a very low threshold for use by anyone working in the Nuclear Division. Issues such as a plant trip, a design basis question, or a non-compliance with a procedure which controls paper flow, each receive attention in the CR process. This allows tracking and trending of low level as well as high level issues to aid plant management to set priorities on issues as they arise. The CR process is used to initiate operability determinations, root cause determinations, license amendment application preparation, and reportability determination among others. Reportability can include the 10 CFR 50.72, 10 CFR 50.73, 10 CFR 21, or 10 CFR 20 as well as other reporting requirements.

Corrective actions which are generated by the CR process are tracked in a Plant Manager Action Item (PMAI) tracking system. This is a plant specific tracking system which follows the corrective actions to completion and gives the items visibility within the organization.

3.4 Event Response Teams

An Event Response Team (ERT) program provides for a fast acting group of knowledgeable plant personnel to investigate the root cause of plant events such as, automatic reactor trips, unplanned unit shutdowns, and recurring maintenance/repair issues. Significant equipment problems can also be the subject of investigations by an ERT. The ERT process is defined in plant procedure 0-ADM-011, "Event Response Team (ERT) Organization." An ERT may be requested by the Nuclear Plant Supervisor (NPS) or any other member of the Nuclear Management Team. The Engineering Manager appoints an ERT leader and concurs with the selection of team members. In cases where an ERT is formed, a CR is initiated.

Team meetings are held as often as necessary until the ERT accomplishes the following tasks:

- Determination of the root cause of the event.
- Determination of short term countermeasures.
- Determination of countermeasures to prevent recurrence of the event.
- Identification of possible generic problems that may cause similar events, and development of action plans to address them.

The ERT uses tools such as event time lines, drawings, cause and effect diagrams, failure modes and effect analysis, possible root cause evaluation matrices, system operators, vendors applications experts, system engineers, and component specialists to aid in the determination of root cause. A formal plant procedure, 0-ADM-059, "Root Cause Analysis," is also in place to provide detailed guidance in determination of root cause. This procedure provides for use of the following proven root cause techniques: task analysis, change analysis, barrier analysis, event time line and causal factor charting, causal factors category listing, cause and effect analysis, and fault tree analysis. A formal procedure, 0-ADM-511, "Post Trip Review," is in place to provide a systematic method for ensuring the proper functioning of safety-related and other important equipment during a reactor trip. The post trip review is used as input to the ERT and provides management with the necessary information to determine when the plant can be safely restarted.

Event Response Team recommendations and countermeasures are documented and tracked using the CR system.

3.5 Commitment and Corrective Actions Tracking (CTRAC) Systems

In 1984 Turkey Point began tracking commitments made to the NRC. The tracking goal is to not miss the completion date for any commitment. Performance Enhancement Program (PEP) Project 7 was implemented to enhance the effectiveness of licensing activities and to improve the coordination and control of NRC related projects. The commitment tracking system was implemented as part of the project to ensure meeting each NRC commitment made by FPL for Turkey Point. This tracking system continues to provide the process for closing each commitment item, such as those made within an application for a License Amendment, an exemption request, a response to a notice of violation, a corrective action within a Licensee Event Report, or other commitment made to the NRC on the docket. Many, off the docket agreements can also be found referenced in this tracking system. A the large number of corrective action commitments were made during the implementation of the PEP in the mid to late 1980s. As a result, a "living schedule" (Integrated Schedule) was created and was required by inclusion in the Turkey Point Operating License until the end date listed in the license, December, 1991. This schedule allowed a reallocation of resources as each new commitment was added to the schedule. The commitment tracking system today is more detailed but essentially the same in function as that generated as part of Project 7.

An additional feature of the system is to make available a search tool which can ascertain if a particular issue is in fact a commitment and its originating document. Procedures often have

commitment references in the introductory sections of the procedure and in many cases in the body of the procedure next to the step which implements the commitment.

3.6 Change Request Notices (CRN)

When an engineering design package is issued, there is always a potential that some field condition or minor change may be required after the package is issued. The engineering procedures permit a design package to either go through a formal revision or to have a CRN issued to resolve the minor change. The CRN is a method under which minor changes are made to an issued engineering design but, where the change requested does not affect the design or safety analysis generated by the original engineering package. A CRN may also be initiated for a design package by any individual and provides a mechanism for formally correcting minor potential problems with an issued design.

3.7 Nonconformances (NCRs)

The NCR process was administered by the Quality Control Department until 1993, at which time, it was made part of the Condition Report (CR) process which is now administered by the Engineering Department.

The historical NCR as part of the CR process provides a means for controlling the disposition of nonconforming items reported during receipt inspection or field inspection of SSCs where Engineering is required to evaluate and resolve the nonconformance. Nonconforming items that are acceptable by virtue of existing design documentation do not require Engineering evaluation and are corrected by a Plant Work Order or Relay Work Order.

3.8 10 CFR Part 21/Significant Safety Hazard Evaluations

One mechanism for evaluating design or equipment problems is through the 10 CFR 21 reporting process. When first instituted in 1977, Part 21 was used extensively to address design and equipment issues identified both internally and by external vendors. 10 CFR 21 evaluations have almost exclusively been performed by engineering personnel if the design or equipment is found to have been provided to FPL. These evaluations provided a means for FPL to evaluate and address specific issues from either external or internal sources and to document required corrective actions and reporting to NRC. Subsequent changes in this rule and the promulgation of 10 CFR 50.72 and 50.73 are such that evaluations are now primarily performed with "operability" criteria as the focus rather than against substantial safety hazards criteria. Operability is incorporated within the condition reporting process and is more restrictive than 10 CFR 21. 10 CFR 21 evaluations are performed for equipment received by the warehouse, but not yet installed in the power plant to evaluate if a substantial safety hazard exists. The reporting criteria of 10 CFR 50.72 and 50.73 and their use will be discussed in section 3.10.

3.9 Operability Determination

Recommended guidance, considerations, and methodology for performing assessments of operability on non-conforming or degraded conditions that are commonly evaluated by Nuclear

Engineering are proceduralized in a QI. The QI is based on the information contained in NRC Generic Letter 91-18, "Information to Licensees Regarding Two NRC Inspection Manual Sections on Resolution of Degraded and Nonconforming Conditions and on Operability."

The following aspects of operability determination are discussed in the QI:

- Operability vs. full qualification
- Operability vs. single failure
- Operability and the use of manual action vs. automatic action
- Operability and the use of probabilistic safety assessment
- Operability vs. environmental qualification
- Technical specification operability vs. ASME Section XI operative criteria
- Operability vs. piping and pipe support requirements
- Operability vs. flaw evaluation
- Operability vs. operational leakage (Generic Letter 90-05)
- Operability vs. structural requirements

In addition, a design/operability reference guide is in the Engineering QIs to provide additional guidance on operability considerations as well as design, safety, quality, and regulatory considerations which may facilitate development of thorough design inputs/analyses and operability assessments. The guidance is intended to be a check list to ensure that applicable considerations are not omitted during a design or operability assessment activity.

Training for operability determination as discussed in Generic Letter 91-18 was added to the lesson plan for initial and requalification training for Plant Nuclear Safety Committee (PNSC) personnel. The training for identification of problems and implementation of corrective actions is discussed in section 3.11 on Corrective Action Program Training below.

3.10 10 CFR 50.72 and 50.73 Reportability Determination

CRs are the entry point for issues of a condition of nonconformance or non-compliance at Turkey Point. Each CR is reviewed by the Nuclear Plant Supervisor for 10 CFR 50.72 reportability in accordance with administrative procedure 0-ADM-115, "Notification of Plant Events." After the determination is made that the condition is not reportable under 10 CFR 50.72 then the CR will next be reviewed for 10 CFR 50.73 reportability by the Licensing Department. If the initial information on the CR did not lead to the conclusion that a condition was reportable but further information raises that potential, the new facts about the condition are relayed to the Licensing Department for further evaluation.

3.11 Corrective Action Program Training

Training on identification of problems and implementation of corrective actions includes the following:

The Engineering Support Personnel (ESP) Training Plan includes initial training on the Corrective Action Program which is a basic review of the plant procedures associated with the corrective

actions program including the CR process. It is part of the Initial Indoctrination training section of the INPO accredited Engineering Support Personnel (ESP) Training Program. The Problem Identification and Correction (PIC) process is covered in a three day class which includes topics such as, defining the problem, determining root cause and the development of appropriate corrective actions. The PIC process training is offered to appropriate management and engineering personnel.

The CR process is a subject of the General Employee Training Program presented to plant employees and contractors on an annual basis. Additionally, the opportunity to provide information directly to the NRC in accordance with the provisions of Form 3 is a subject of this training.

Notification of Plant Events is a lesson plan which is used for the training of licensed operators which includes the requirements of 10 CFR 50.72.

4.0 NRC/Turkey Point Interfaces

FPL has a policy that requires open and candid communications with NRC personnel. To that end, the following communications are maintained. Daily conversations are held with the resident Inspectors at the plant by many staff members on site. Weekly meetings are typically scheduled between the Plant General Manager, Licensing Manager and the residents. Frequent communications are made with the NRC project manager for Turkey Point. A regulatory liaison office is maintained in Washington D.C. to allow expedited face to face communications with the NRC staff for any issue which may arise.

NRC Request [e] **"The overall effectiveness of your current processes and programs in concluding that the configuration of your plant(s) is consistent with the design bases."**

Turkey Point Response

An outline of the organization of the response to this request follows:

1.0 Introduction

2.0 Program Reviews Which Lead to Design Basis Verification

- 2.1 IEB 79-14, Small Bore Walkdown Program
- 2.2 Revised Technical Specification Project
- 2.3 Emergency Power System Enhancement
- 2.4 Containment Structural Re-analysis
- 2.5 Thermal Power Uprate Project

3.0 FPL Vertical Slice Audits and Conclusions

- 3.1 Emergency Power System
- 3.2 Service Water System Operational Performance Self-assessment (SWSOPA)
- 3.3 Quality Assurance Audit Conclusions

4.0 NRC Safety System Functional Inspections (SSFIs)

5.0 Overall Conclusion

1.0 Introduction

FPL, with reasonable assurance, is confident that the current processes and programs are effective in ensuring that the Turkey Point has understood and documented design bases and that the design and configuration are consistent with those design bases based upon the following:

1. The initial plant verification process, continued configuration control processes, and audits and inspections verify consistency between plant design and dependent information. In addition, previously performed design basis documentation efforts and design basis verification efforts such as vertical slice audits and related reviews represent a baseline that establishes the consistency between the plant, plant procedures, and the design bases. The NEI 96-05, "Guidelines for Assessing Programs for Maintaining the Licensing Basis,"assessment has thus far provided positive results. No significant programmatic breakdowns were identified, thereby providing reasonable assurance that structure, system, component configuration, procedures, and performance are consistent with the design bases. (Refer to section [f] for a detailed discussion of the NEI-96-05 assessment.)

2. The plant design change process ensures the compatibility of the plant physical and functional characteristics with the design bases and plant documentation. Changes are evaluated and reviewed to fully determine the impact of each change on other systems, and documents the evaluations to ensure adherence to established requirements. (Refer to the response to request [a] for a detailed discussion of the design change process.)

3. The process of identifying and determining reportability of found conditions and resolving those conditions includes the Condition Report program, the review of potential defects and non compliance, the Nuclear Safety SPEAKOUT program, the QA audit and engineering reviews of the CRs. For cases where problems were and are identified, appropriate root cause analyses and corrective actions were and are implemented. If minor discrepancies are found in licensing documents, the condition reporting or other proceduralized processes will be used to resolve them.

2.0 Program Reviews Which Lead to Design Basis Verification

Numerous activities have been performed by FPL at Turkey Point that verify the plant design basis requirements are correctly implemented in the plant and in procedures.

2.1 IEB 79-14, Small Bore Walkdown Program

In response to IE Bulletin 79-14, Turkey Point implemented a major program to reassess the piping support systems for large bore safety-related systems. As an extension to the project, walkdowns were performed of important safety-related small bore piping systems to confirm the acceptability of support system design and installation

2.2 Revised Technical Specification Project

Turkey Point implemented a project to go from custom Technical Specifications to an adaptation of the Revised Standard Technical Specifications in effect at the time, which was the form approved by NRC prior to the current Improved Standard Technical Specifications. This required the review and reassessment of each plant Technical Specification and involved years of work between FPL and NRC to develop a new acceptable Technical Specifications.

2.3 Emergency Power System Enhancement

Two new emergency diesel generators and a spare safety related battery were installed at Turkey Point in 1990-1991 along with a significant modification of the plant emergency electrical distribution system. Aspects of this major design change from design to implementation were reviewed and evaluated by NRC in both their SER for this project and in numerous plant inspections. Design basis type calculations were either revised or recreated, including an EDG Dynamic Load Study, short circuit/voltage drop calculations, battery sizing, and breaker coordination.

2.4 Containment Structural Re-analysis

A detailed analysis for the Turkey Point containment building was recreated to confirm the acceptability of this structure.

2.5 Thermal Power Uprate Project

The Thermal Power Uprate project involved the review and reevaluation of many safety-related system at Turkey Point. Numerous calculations were recreated including those for the containment response analysis. Accident transients were reanalyzed. Offsite dose calculations were reperformed. Thermal hydraulic analyses for the Component Cooling Water (CCW) system were performed. Tank sizing calculations were reperformed. Safety-related setpoint calculations were reperformed, and control system transients were reanalyzed.

3.0 FPL Vertical Slice Audits and Conclusions

Both FPL and NRC have performed "vertical slice" audits of systems to confirm the adequacy and completeness of design basis information related to Turkey Point. These audits include, but are not limited to, the auxiliary feedwater SSFI by NRC, NRC audit of the Design Basis Program, FPL preparation for an Electrical Distribution Safety Functional Inspection (EDSFI), and the service water system operational performance self-assessment awaiting final closeout inspection by the NRC.

3.1 Emergency Power System

Because FPL had implemented the Emergency Power System (EPS) Enhancement Project, significant FPL resources had been expended reconstituting and redesigning the plant's electrical

distribution system. Based on the significant number of inspections performed by the NRC during the EPS project, the NRC did not conduct an EDSFI at Turkey Point.

3.2 Service Water System Operational Performance Self-assessment (SWSOPA)

An SWSOPA was initiated by FPL at Turkey Point in 1995. This self-assessment was approved by the NRC in lieu of an NRC conducted SWSOPI following staff review of FPL's self-assessment. The level of documentation found for the intake cooling water system was considered to be typical for a plant licensed in the early 1970s. Well documented design features provided additional assurances that actual design deficiencies did not exist.

The conclusions reached were that two design related issues which reflected upon current design basis maintenance practices were minor and related to initial plant design. Additionally, the SWSOPA examined current intake cooling water design basis maintenance. The self-assessment concluded operating, alarm response, off-normal, and emergency operating procedures for these systems were adequate in maintaining the system configuration and function. The design change process reviewed during this assessment was found to adequately maintain the design basis and drawings which reflect the as-constructed configuration.

An NRC oversight inspection of the self-assessment was conducted in March, 1995 during the third week of the initial four-week self-assessment. This inspection resulted in comments on the conduct of the self-assessment, but did not result in technical issues. The self-assessment final report was provided to the NRC in July of 1995, and a follow-up inspection is currently scheduled for early February, 1997.

3.3 Quality Assurance (QA) Audit Conclusions

Several QA reports from the beginning of 1993 to September 1996 have been reviewed. These reports included the latest (June 1995) programmatic audit of engineering activities, performance monitoring reports on systems/components, and two 1996 Quality Reports on system reviews. Based upon these reviews, there is reasonable assurance that the accuracy of the FSAR and its design basis are being maintained, and that implementing procedures maintain their fidelity to the FSAR. Some findings/comments regarding the FSAR were contained in the reports, but were relatively minor in nature and do not affect the acceptability of the conclusion.

4.0 NRC Safety System Functional Inspections (SSFIs)

The first of these audits was the NRC SSFI of the Auxiliary Feedwater (AFW) system conducted in 1985 by the NRC. This audit clearly identified concerns related to the way design basis information was maintained and focused on understanding design bases. Corrective actions from this audit were sweeping in nature and impacted every area of plant operations including; training, maintenance controls, testing, maintenance backlogs, QA auditing and design control. This audit resulted in FPL's decision to implement a Design Basis Reconstitution Program. Specific concerns related to AFW design were addressed, corrected, and incorporated into the Design Basis Documents (DBDs). Programmatic improvement efforts became part of FPL's Performance Enhancement Program (PEP).

The NRC Turkey Point Design Basis Validation Inspection (NIR 89-203) was performed to review the adequacy of FPL's Design Basis program implemented on 18 selected safety and non-safety systems at Turkey Point. This inspection was conducted as a SSFI on the Reactor Protection System (RPS), the Component Cooling Water (CCW) system, and on the Electrical Distribution System (EDS). In general, the NRC was impressed by the depth, breadth, and quality of the system DBDs, finding them useful and well researched. On the other hand, the depth of verification was identified as a concern, the component level DBDs were found to have errors, and the correctness of certain calculations was questioned. To correct these identified weaknesses, FPL corrected information deficiencies in the component DBDs, enhanced the verification of the component DBDs, and instituted improvements in the calculation process, including retrieval and indexing of FPL and vendor calculations in the computerized data base PassPort.

5.0 Overall Conclusion

While the earliest of these audits and inspections identified concerns with the control of design bases information, the programs and projects e.g., the DBD development, instituted by FPL, provided a strong framework to correct the identified deficiencies. Later audits by the NRC and self-assessments by FPL show a major improvement in the control and maintenance of design bases at Turkey Point. These processes have clearly shown that Turkey Point is in control of its design basis information and is maintaining it in an acceptable manner. Major improvements in configuration control through improved access to design documents, redrawing of important plant drawings, walkdowns of important mechanical and electrical systems, etc., ensure that design information and its control are significantly improved.

The focus of more recent FPL management activities has been to reduce the quantity or number of changes occurring at its nuclear units such that the impact on the design bases is reduced. Backlogs of design changes and required maintenance have been reduced, resulting in improved control of the plant's configuration.

Based upon information presented in this section, as well as in the FPL response to requests [a] thru [d] of this enclosure, FPL has concluded that the control processes provide reasonable assurance and confidence that the plant is being operated and maintained within its design bases. The validity of these configuration control processes are confirmed by continued safe plant operation, self-initiated evaluations, and NRC assessments of plant performance. Additionally, the events, inspections, audits and programs discussed above provide the basis to conclude that with reasonable assurance, the design basis information is adequate and available. The corrective action program assures that problems or concerns which are identified are tracked, evaluated and corrective actions implemented to resolve the concern. The above described processes assure that the design bases are maintained.

NRC Request [f] "Supplemental request for information on design review/reconstitution programs."

Turkey Point Response

The following outline provides the organization for the response to this additional information request.

1.0 Nuclear Energy Institute 96-05 Initiative

2.0 FSAR Reviews and Self-Assessments

3.0 Design Basis Reconstitution

4.0 Commitment Details

1.0 Nuclear Energy Institute (NEI) 96-05 Initiative

In response to NRC Information Notice 96-17, "Reactor Operation Inconsistent with the Updated Final Safety Analysis Report," dated March 18, 1996, NEI 96-05, "Guidelines for Assessing Programs for Maintaining the Licensing Basis," was issued.

Turkey Point is currently proceeding with the review effort proposed by NEI, which will address programmatic and non-programmatic FSAR changes and assess the accuracy of two safety and two non-safety risk significant systems described in the FSAR. Following completion of the "NEI" effort, it is FPL's intention to perform an additional review of sections of the FSAR over a two year period to correct any existing documentation discrepancies. See details in section 4.0 below. Additionally, FPL engineering is conducting a review of the 10 CFR 50.59 screening process at Turkey Point in an effort to provide more stringent and more consistent controls on this important input to the change process at the plant.

2.0 FSAR Reviews and Self-assessments

In response to the events that occurred at Northeast Utilities' Millstone plant, Turkey Point engineering conducted a self-assessment of the FSAR in March and April of 1996. This review was conducted by a team of senior FPL staff from Engineering and Quality Assurance and encompassed about three quarters of the Turkey Point FSAR. In that review, 96 comments and/or questions were generated. These comments were broken down into four categories:

- 67 - Required no change or the change was already in progress
- 24 - Were administrative or very minor
- 5 - Required the FSAR to be updated to reflect the approved design or procedure
- 0 - Required a plant or procedure change

The general conclusion of this effort is that the important design bases information is correctly documented in the FSAR, but that some specific details were found to be inaccurate. The majority of items identified related to equipment that had been abandoned in place, but that the FSAR had not been appropriately updated. FPL has and is continuing to implement a program to address and deal with the issue of abandoned plant equipment. Documented discrepancies have been resolved and incorporated into the FSAR.

In addition to, but separate from the self-assessment effort, an operational review of the FSAR was conducted by senior operations and training staff related to operational statements in the FSAR. This review, completed in 1996, identified 45 discrepancies and/or questions related to the FSAR which can be broken down as follows:

- 21 - Required no change or change was in progress
- 16 - Required an administrative or minor wording change
- 8 - Required the FSAR to be updated to reflect an approved design or procedure
- 0 - Required a plant or procedure change

The results of this review are similar to that identified during the FSAR self-assessment process. Changes identified by this review process have been incorporated into the FSAR.

3.0 Design Basis Reconstitution

A design basis reconstitution was completed at Turkey Point on a selected number of systems and licensing basis information. See the discussion on DBD in the Turkey Point response to request [c].

4.0 Commitment Details

The design bases and design bases information are adequately maintained and retrievable. FSAR reviews performed to date provide reasonable assurance that design basis information is correctly documented, however, some specific details within the FSAR were found to have discrepancies. FPL is planning to perform a graded FSAR review over the next 2 years to further address the accuracy of information it contains. This review will be focused on sections of the FSAR that have not recently seen significant updates as a result of other design basis projects e.g., Thermal Uprate and EPS have revised/updated selected portions of the FSAR for agreement with plant operating and maintenance practices. Select validation of data will be performed on information contained within the sections reviewed. This review will commence following completion of the NEI review effort scheduled for April 1997. If the need is identified as a result of these reviews, a Safety System Functional Assessment will be completed on an appropriate system or group of systems.

Appendix A
Partial List of Acronyms

A/E	Architect/Engineer
AFW	Auxiliary Feedwater
BIT	Boric Acid Injection Tank
CM	Configuration Management
CNRB	Company Nuclear Review Board
CR	Condition Report
CRN	Change Request Notice
CTRAC	Commitment Tracking
DBD	Design Basis Document
DCR	Drawing Change Request
EDG	Emergency Diesel Generator
EDS	Electrical Distribution System
EDSFI	Electrical Distribution System Functional Inspection
ENG QI	Engineering Quality Instruction
EOP	Emergency Operating Procedure
EP	Engineering Package
EQ	Equipment Qualification
ERT	Event Response Team
ESP	Engineering Support Personnel
ESFAS	Emergency Safety Feature Actuation System
FCP	FSAR Change Package
FPL	Florida Power and Light Company
FSAR	Final Safety Analysis Report
GL	NRC Generic Letters
ICW	Intake Cooling Water
IEE	Item Equivalency Evaluation
IN	NRC Information Notices
INPO	Institute Of Nuclear Power Operations
ISI	Inservice Inspection
ITOP	Implementor Turnover Package
LER	Licensee Event Reports
MEP	Minor Engineering Package
MOV	Motor-Operated Valve
NCR	Non-Conformance Report
NEI	Nuclear Energy Institute
NNS	Non-Nuclear Safety
Non-PC/M	Non-Plant Change/Modification
NPS	Nuclear Plant Supervisor
NRC	Nuclear Regulatory Commission
OEF	Operating Experience Feedback
PC/M	Plant Change/Modification
PEG	Production Engineering Group
PEP	Performance Enhancement Program
PMAI	Plant Manager Action Item
PMT	Post-Maintenance Testing
PNSC	Plant Nuclear Safety Committee
POD	Plant Operating Drawings
PRA	Probabilistic Risk Assessment
PRB	Plant Review Board
PWO	Plant Work Order
QA	Quality Assurance
QI	Quality Instruction
RCS	Reactor Coolant System
REA	Request for Engineering Assistance
SAR	Safety Analysis Report
SEN	Significant Event Notification
SER	Safety Evaluation Report
SO	Significant by Others Report
SOER	Significant Operating Experience Report
SSFI	Safety System Functional Inspection
SSC	System, Structure & Component
SSH	Significant Safety Hazard
SWSOPI	Service Water System Operational Performance Inspection
SWSOPA	Service Water System Operational Performance Self-assessment
TEDB	Total Equipment Data Base
TQAR	Topical Quality Assurance Report
TSA	Temporary System Alteration
UFSAR	Updated Final Safety Analysis Report

Appendix B
QA Audits, Findings and Corrective Actions

Several Findings were documented and/or Condition Reports were issued as a result of audits with respect to translating design basis into procedures. They were considered minor in nature and did not affect conclusions regarding strengths. They were, as follows:

1. Audit QAO-PTN-96-002 - PMON #1, Post Accident Sampling System

   CR 96-1233 found that a note on drawing 5613/5614-M-3036, Sh. 1, that prescribed that in case of failure of the normal flowpath to PASS, valve PASS-3/4-010 was to be opened. But this note had not been incorporated into procedures. Engineering has removed the note.

   CR 96-1241 identified a drawing inconsistency regarding seismic boundary classification of the normal sample coolers. Dwg. 5610-M-3094, Sh. 1, indicates by flags that the PASS cooler is seismic. But drawing 5613/5614-M-3036, Sh. 1, do not have similar flag designators for the normal coolers. Engineering has revised the drawings to show flag designators.

   CR 96-022 identified seismic boundary inconsistency between Post Accident Containment Ventilation (PACV) system drawings 5613/5614-M-3094, Sh. 1, and FSAR Appendix 5, and section 9.12.1.2. Engineering evaluated same and has revised the drawings and made minor wording changes to the FSAR to indicate that the PACV piping may be seismically installed.

2. Audit QAO-PTN-95-018 - PMON #2, Pressurizer Relief System

   CR 95-1112 raised a concern that the wording of FSAR section 4.3 was misleading regarding the OMS setpoint because it indicated that the OMS varies the setpoint of the PORV as RCS temperature varies. But, operating procedures effectively eliminate this variable. Engineering's evaluation explained that the description was a design feature. Engineering agreed to submit a clarification to the FSAR, and has revised same.

   CR 95-1116 identified a quality group transition boundary error on Unit 3 power operated relief valves. Boundary flags were on the inlet versus the outlet. Dwg. 5613-M-3041, Sh. 2, has been revised.

3. Audit QAO-PTN-95-014 - PMON #1, Containment Spray System

   CR 95-0573 found that the alignment of all four high head safety injection pumps to a single refueling water storage tank, e.g., during refueling, had not been evaluated. Engineering performed an evaluation and determined that the alignment was acceptable.

4. Audit QAO-PTN-95-008 - PMON #1, Waste Disposal System - Gaseous

   Finding 2 - FSAR description indicated that gaseous monitoring was shown on a drawing, including the CO7 gas analyzer panel, but this panel's hydrogen and oxygen analyzers have been inoperable for years. Technical Department evaluated the finding and made plans to abandon the equipment formally. The system engineers reviewed the FSAR sections for their systems, but found no additional discrepancies.

   CR 95-0230 found that the normal valve position for the pressurizer relief tank to gas analyzer sample valve prescribed by a chemistry procedure was in conflict with those shown by the FSAR description and system drawings. The procedure was in error and has been revised.

5. QAO-PTN-94-020 - PMON #1, Nuclear Instrumentation Review

   Finding 1 - Reactor trip setpoints changed in a procedure without processing an authorization of the procedural change

   For main steam safety valve testing, a safety evaluation had been reviewed and approved for prescribing reactor trip setpoint values. However, nobody had changed the implementation procedure to reflect these setpoints. Technicians installed the new setpoints and only referred to the safety evaluation's file number as the reason. I&C's and maintenance planning practices were reviewed and have been revised to prevent this.

6. Audit QAO-PTN-93-006 - PMON #4, Waste Disposal System - Liquid

   The report recommended that the FSAR description of boron recycle be annotated to explain that the system is no longer in use. The report also recommended upgrading the procedure format and content quality.

   Since this audit, the abandoned equipment program has been developed and PC/Ms written to delete the FSAR section on boron recycle. Also, the procedures have been changed to the upgrade format. The procedure will be reviewed by QA during the next review of this system. (This audit/review should be complete by the end of 1996 or early 1997).

Several Findings/Condition Reports or comments were documented in reports and audits with respect to maintaining design basis with respect to SSCs. They were considered minor in nature and did not affect conclusions regarding strengths. They were, as follows:

7. Audit QAO-PTN-96-005 - PMON #4, CVCS

   This report identified that a seismic anchor for the boric acid supply piping had been removed without prior evaluation of its seismic affect. The anchor removed was for a BIT recirculation pump that was awaiting formal abandonment. A condition report

was written by the system engineer. An evaluation determined that no operability concern existed.

8. Audit QAO-PTN-95-015 - PMON #2, RPS and ESFAS

A conditon report found that of the three portable fans required to be stored in the Cable Spreading Room by procedure, only one was there. Supplemental cooling of the DC Equipment/Inverter rooms using these portable fans and their storage is described in the FSAR. The Operations resolution to ensure fans are properly stored, was to add a check to the Nuclear Plant Operator logsheet. (This CR was unrelated to RPS and ESFAS but was included under PMON #2 because the condition was identified while in the cable spreading room observing an RPS test).

9. Audit QAO-PTN-95-008 - PMON #1, WDS-Gaseous

A condition report found that the capability to operate the Gas Analyzer sample valve from the Pressurizer Relief Tank was not indicated on the system drawings or in the FSAR. Engineering has since revised system drawings to reflect this function.

10. Audit QAO-PTN-94-016 - PMON #6, Configuration Control of Drawing for Containment Spray Reset Pushbutton

A drawing for the system was found to be incorrect. A switch replacement could have resulted in an incorrect wiring configuration. A drawing change request was issued to correct the drawing.

11. Audit QAO-PTN-94-003 - PMON #10, Unit 3 EDGs

A condition report found that the Unit 3 Emergency Diesel Generators Day Tank's level switches which are within a seismic boundary had been procured without any seismic requirement being specified. Engineering evaluated the switches and determined that they would remain functional after a seismic event. Corrective actions included update of the equipment data base to add seismic requirements for these switches.

12. Audit QAO-PTN-93-028 - PMON #1, Spent Fuel Cooling System

A condition report found that high radiation area gates had been installed without design authorization. The gates had been attached to supports for a Spent Fuel Cooling system filter, and also impinged on the Component Cooling Water piping. Engineering evaluated the condition and determined that it was acceptable. A drawing change was made to document the condition.