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Research Project 3075-25
FINAL REPORT
October 1998

Oconee Nuclear Station Application for Renewed Operating Licenses

Prepared by
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REPORT SUMMARY

The option to operate a nuclear power plant beyond its initial license term of 40 years is an important factor in financial decisions and long-term planning for utility asset management and capital improvement. This report documents the second nuclear power plant license renewal application (LRA) submitted to the U.S. Nuclear Regulatory Commission (NRC). This submittal of the Application for Renewed Operating Licenses, Oconee Nuclear Station, to the Nuclear Regulatory Commission by Duke Energy Corporation (Duke) is for a 3-unit station with B&W NSSS; whereas, the first was for a 2-unit station with Combustion Engineering NSSS. This submittal reinforces the milestone set in April when the first application was submitted.

Background

Over the past two decades, an important aspect of the nuclear industry has been the evolution of life cycle management of a nuclear power plant. The requirements to achieve a license to operate a plant up to 60 years is one result of this work. Interaction between utilities and the NRC has resulted in a definition of the technical approach and content of an LRA. The Oconee LRA is the second to be submitted to the NRC for a commercial nuclear power plant. Along with the first, its review and safety evaluation will set precedents for the industry.

Objectives

To make available to other utilities in electronic form, the complete Oconee 4-volume LRA as submitted to the NRC. The CD-ROM is available to EPRI members and other EPRI licensees.

Approach

This report consists of this brief description plus a computer readable CD-ROM which contains:

- The 4-volume Application for Renewed Operating Licenses.
 - Volume 1: Submittal Letter plus Exhibit A: License Renewal - Technical Information, OLRP-1001, Chapters 1 & 2

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- Volume 2: Exhibit A (continued), Chapter 3
 - Volume 3: Exhibit A (continued), Chapters 4 & 5; Exhibit B: UFSAR Supplement for License Renewal; Exhibit C: Technical Specification Changes
 - Volume 4: Exhibit D: Applicant's Environmental Report Operating License Renewal Stage
- This Overview Report.
 - The installation files for the software (Acrobat Reader) that displays the documents.
 - Other files that support accelerated searching with the Application for Renewed Operating Licenses.

Results

This report's accompanying CD-ROM contains the application for renewed operating licenses for the Oconee Nuclear Station, Units 1, 2, and 3, pursuant to the provisions of 10 CFR Part 54 and 10 CFR Part 51 for contents of an application. The content and format for system and commodity reports, and the environmental report, were based on the guidelines developed by the Nuclear Energy Institute and its utility members.

EPRI Perspective

Nuclear power plants, as baseload suppliers of electricity, are major corporate assets. As the nuclear industry enters its fourth decade as a major producer of clean electricity, the structure of the utilities are undergoing a historical landmark transition of economic deregulation and to a competitive, market-driven industry.

A key aspect in the competitiveness of nuclear power plants is flexibility for run/refurbish/retire decisions. In turn, a key factor for such flexibility is the maximum possible operating license term -- a renewed license provides up to a 60-year operating window. Having a predictable regulatory process to achieve a renewed license is an important objective. The Oconee LRA is a major step in achieving this objective.

Interest Categories

Plant life cycle management

Licensing and safety assessment

Keywords

License renewal

Aging management

Life cycle management

PWR

Oconee Nuclear Station

ABSTRACT

This report contains the Oconee Application for Renewed Operating Licenses submitted by Duke Energy Corporation (Duke) to the Nuclear Regulatory Commission (NRC) on July 6, 1998. This application for the renewal of the operating licenses for the Oconee Nuclear Station (Oconee), Units 1, 2 and 3, contains the information pursuant to the provisions of 10 CFR Part 54 and 10 CFR Part 51 for contents of an application. The content and format for system and commodity reports, and the environmental report, were based on the guidelines developed by the Nuclear Energy Institute and its utility members. This report consists of a computer readable CD-ROM which contains:

- The 4-volume Application for Renewed Operating Licenses.
 - Volume 1: Submittal Letter plus Exhibit A: License Renewal - Technical Information, OLRP-1001, Chapters 1 & 2
 - Volume 2: Exhibit A (continued), Chapter 3
 - Volume 3: Exhibit A (continued), Chapters 4 & 5; Exhibit B: UFSAR Supplement for License Renewal; Exhibit C: Technical Specification Changes
 - Volume 4: Exhibit D: Applicant's Environmental Report Operating License Renewal Stage
- This Overview Report.
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OCONEE NUCLEAR STATION APPLICATION FOR RENEWED OPERATING LICENSES

Background

This report documents the second nuclear power plant license renewal application (LRA) submitted to the U.S. Nuclear Regulatory Commission (NRC); this submittal reinforces the milestone set in April when the first application was submitted. The option to operate a nuclear power plant beyond its initial license term of 40 years is an important factor in financial decisions and long-term planning for utility asset management and capital improvement. This submittal of the Application for Renewed Operating Licenses for the Oconee Nuclear Power Station (Oconee) to the Nuclear Regulatory Commission by Duke Energy Corporation (Duke) is for a 3-unit station with B&W NSSS; whereas, the first was for a 2-unit station with Combustion Engineering NSSS.

Purpose

This report's accompanying CD-ROM contains the application for the renewal of the operating licenses for Oconee Units 1, 2 and 3 pursuant to the provisions of 10 CFR Part 54 and 10 CFR Part 51 for contents of an application. The content and format for system and commodity reports, and the environmental report, were based on the guidelines developed by the Nuclear Energy Institute and its utility members.

The purpose is to make available to other utilities in electronic form, the complete Oconee 4-volume LRA as submitted to the NRC. The CD-ROM is available to EPRI members and other EPRI licensees. A similar CD-ROM was published by EPRI (TR-111031-CD) for the Calvert Cliffs Nuclear Power Plant LRA.

Contents

This report consists of this brief description plus a computer readable CD-ROM which contains:

- The 4-volume Application for Renewed Operating Licenses.
 - Volume 1: Submittal Letter plus Exhibit A: License Renewal - Technical Information, OLRP-1001, Chapters 1 & 2
 - Volume 2: Exhibit A (continued), Chapter 3
 - Volume 3: Exhibit A (continued), Chapters 4 & 5; Exhibit B: UFSAR Supplement for License Renewal; Exhibit C: Technical Specification Changes
 - Volume 4: Exhibit D: Applicant's Environmental Report Operating License Renewal Stage
- This Overview Report.
- The installation files for the software (Acrobat Reader) that displays the documents.
- Other files that support accelerated searching with the Application for Renewed Operating Licenses.

It should also be noted that the formatting and style of the CD-ROM are not exactly the same as the hard copy. This causes lines of text on each page to be different from the electronic copy to the hard copy.

Computer System Requirements

Computer system requirements are:

Windows Requirements	Macintosh Requirements
<ul style="list-style-type: none">• 386-, 486-, or Pentium-based personal computer	<ul style="list-style-type: none">• 68020 (Macintosh II series) or greater processor
<ul style="list-style-type: none">• Microsoft Windows 3.1 or greater	<ul style="list-style-type: none">• MacOS 7.0 or later
<ul style="list-style-type: none">• 8 MB application RAM	<ul style="list-style-type: none">• 4 MB application RAM
<ul style="list-style-type: none">• 4 MB hard disk space	<ul style="list-style-type: none">• 4 MB hard disk space
<ul style="list-style-type: none">• CD-ROM drive	<ul style="list-style-type: none">• CD-ROM player

Installation of Acrobat Reader

The installation directions for the Windows version of the Acrobat Reader software are on the CD-ROM and normally involve clicking on the **Setup.exe** file/icon. To find the **Setup.exe** file:

1. Insert the CD into your CD-ROM drive.
2. In Windows Explorer (or similar program), go to your CD-ROM drive; click on **Oconee**.
3. Open the **Install** directory/folder.
4. Open the **Rdr_Srch** directory/folder.
5. Open the **16bit** or **32bit** directory/folder (depending on your hardware). See the **Readme.wri** file to determine which you should use.
6. Open the **Setup.exe** file.

Be sure you install the version of Acrobat Reader software that is on the CD-ROM to assure that the most recently compatible reader has been installed.

For those who need a Macintosh version of Adobe Reader, please obtain it from Adobe's Web Site at:

<http://www.adobe.com/prodindex/acrobat/readstep.html>

The **Readme.wri** file also provides instructions on obtaining the Macintosh version on a separate CD.

For further details or problems:

1. Using a program like Windows Explorer, open the **Install** directory/folder on the CD-ROM.
2. Open the **Rdr_Srch** directory/folder.
3. Open the **16bit** or **32bit** directory/folder, depending on your hardware.
4. Open the **Readme.wri** file.

Using the CD-ROM

After installing the Acrobat Reader software (as described in the Installation of Acrobat Reader section) and using a program like Windows Explorer, find your CD-ROM drive. Click on **Oconee**. The right side of your screen (Contents) will contain folders and files. Double click on the **Oconee.pdf** file. A screen comes up with a picture of the Oconee plant. A single click on the picture brings up a screen with eight buttons for accessing the contents of the four volumes. You may navigate directly from the table of contents at the beginning of each LRA section (select the bookmark icon – second button from left on the tool bar -- if it is not already displayed).

The advantages of publishing as a CD-ROM are:

- Considerable reduction of the amount of paper in a form that can be readily distributed.
- Finding a specific subject matter is rapid. Users can navigate to a specific chapter from the tables of contents, or use the text search capability.
- Users can print any pages of interest from specific reports.
- Text and graphics may be copied and used in other documents.

The Acrobat Reader™ software that accesses the CD-ROM is widely used and will operate with both Windows and Macintosh operating systems.

Using the Acrobat Reader is via menu bar selections and tool bar icons. The purpose of the menu bar functions is clear from the descriptions.

The On-line Guide, accessible after installation, provides detailed information for using Acrobat Reader.

The files with the extension ".PDF" are Acrobat Reader files.

Searching the LRA for Information

One means of searching is by navigating within the LRA to a chapter subject of interest. This is done by means of links within each section's table of contents. Selecting a line in these tables will jump to the first page of the section.

The second means of searching is by word "find", similar to this feature in word processing software. This is initiated by selecting the first "pair of binoculars" icon on the tool bar. The search starts from the current position and proceeds sequentially to the next occurrence.

A third means of searching is by text strings. The volumes on the CD-ROM have been processed to quicken such searching. An index of the search results, and their location within the report is also provided as a result of such a search. To do this, select the second "pair of binoculars" icon on the tool bar and type in search information. Use the last four buttons on the tool bar to navigate among your search results and to see how many pages on which the text occurs. Using the advanced search is not as intuitive as other features of the software and readers are encouraged to review the more detailed instructions on searching which can be found by pulling-down the "Help" menu and selecting "Plug-in Help."

Readers should note that 1) the ability to print is available, and 2) text can be copied and pasted into other documents.

It should also be noted that the formatting and style of the CD-ROM are not exactly the same as the hard copy. This causes lines of text on each page to be different from the electronic copy to the hard copy.