

# GE-Hitachi Nuclear Energy Americas LLC

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**Subject: Submittal of ABWR Design Certification Document Revision 4 in electronic format**

**Reference:** Letter MFN 017-97, J. Quirk to NRC, *ABWR Design Control Document, Revision 4*, dated March 28, 1997, Docket No. 52-001

## Background

By the referenced letter, General Electric-Hitachi (GEH) submitted Revision 4 of the ABWR Design Control Document (DCD) dated March 1997. This submittal to the NRC was made of the DCD in hard copy format only. No electronic version was submitted.

Subsequently, the NRC reviewed and approved the DCD and the ABWR as a certified design, as documented in 10CFR52 Appendix A.

The final approved DCD was provided to the National Technical Information Service (NTIS) for archival storage. NTIS copied the original hard copy DCD to microfilm. This now constitutes the 'official' version of the GEH ABWR DCD.

To support the NRC review of the pending South Texas Project (STP) Combined Operating License Application (COLA), the NRC has requested that GEH provide an electronic version of the ABWR DCD. Recognizing that the 'official' copy of the DCD was provided in hard copy and that no electronic version was submitted at that time, GEH was requested to provide the 'best possible' electronic version of the DCD that could be certified to be the same as the original hard copy.

PDF FILES NOT ADDED TO  
ADAMS  
PROVIDED AS CONVENIENCE  
COPY TO NRC  
CD sent to:  
File Center  
AND FM  
DOSO  
NRC

**Certification Process**

GEH obtained a printed copy of the microfilmed ABWR DCD Revision 4 from NTIS. GEH possesses a set of .PDF electronic files which were created in 1997 and are believed to be created from the same word processing files that were used to print the original hard copy DCD submitted to the NRC (which now constitutes the official record copy).

Sufficient documentation does not exist to establish (with certainty) the relationship between the .PDF files and the original hard copy. Therefore, GEH conducted a page-by-page comparison of the hard copy DCD and the electronic .PDF files. This effort has been completed and GEH now has available a set of .PDF files which match exactly (in content) the original (official) GEH ABWR DCD Revision 4. There remain only a few minor format variations, which do not detract from or alter the information provided.

Because of the nature of microfilm and the known quality issues of reducing paper documents to microfilm, almost every page of the .PDF version of the DCD is clearer and easier to read than the original. This is especially true with graphics such as drawings, sketches, and etc.

**Technical Quality of the .PDF Files (PDFs)**

The .PDF files that constitute the verified electronic DCD were created in 1997 using Adobe Distiller for Macintosh version 2.0. This, of course, predates the NRC efforts to establish controls and standards for the creation of .PDF files.

These .PDF files have been compared to the NRC current submittal guidance using Adobe Acrobat Preflight and, while very close, they do not exactly match the current Preflight standards.

Most notably, when the .PDFs were originally created, the fonts were not embedded into the .PDFs. Acrobat's normal font substitution capability allows the .PDF files to view and print in an acceptable manner, therefore, this does not appear to be a material deficiency.

The graphics included in Chapter 21 (Figures) in the .PDF have been verified to be of 300 dpi or greater resolution and, generally, are of a 11x17 .TIF image reduced to 8 ½" x 11" in the .PDF. They have been processed through Optical Character Recognition (OCR) software and are therefore text-searchable to the extent possible.

The graphics included in the DCD sections appear to be, for the most part, 200 dpi images of good quality and legibility.

**.PDF vs Hard Copy**

While the .PDF files that constitute the verified electronic DCD do not in every way comply with the NRC current .PDF submittal guidance, they are very close and offer a significant improvement in quality as compared to the official microfilm copy.

	PDF Copy	Microfilm Copy
Text Searchable?	Yes	No
Copy to Clipboard?	Yes	No
Easily Available to Reviewers?	Yes	No
Legibility	Very Good	Compromised

**Conclusion**

Recognizing that the NTIS hard copy DCD is the official legal copy, GEH concludes that the verified .PDF version of the ABWR DCD Revision 4 offers the NRC and designers an electronic tool that has been certified to contain the same information as the NTIS version. As such, it offers the reviewers and designers a substantially improved and usable DCD to support the development and review of the STP COLA.

It is noted that this submittal merely reformats the original ABWR DCD Revision 4 to electronic format from hard copy. As such, and consistent with submittal protocol of the era, information today considered Sensitive Unclassified Non-Safeguards Information (SUNSI) remains in this document. Accordingly, GEH requests withholding of this electronic DCD from public access, in accordance with the requirements of 10 CFR 2.390.

The enclosures contain no information that GE considers proprietary although full copyright protection applies. Safeguards information is excluded and is maintained in secure hard copy files.

Should you have any questions concerning this matter, please contact me at 910-602-1885 or joe.savage@ge.com.

Sincerely,



Joseph A. Savage  
Project Manager, ABWR Licensing

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