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Proprietary Notice
This letter forwards proprietary information in accordance with 10CFR2.390. Upon the removal of Enclosure 1, the balance of this letter may be considered non-proprietary.

MFN 07-627

Docket No. 52-010

January 21, 2007

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Subject: Submittal of DOORS Software Audit Presentation Materials and Slides for Support of ESBWR Design Certification Application – Human Factors Engineering

The purpose of this letter is to submit a copy of presentation materials used during the NRC for audit of the Dynamic Object-Oriented Requirements System (DOORS) Software conducted November 13 through November 16, 2007.

This letter is to support NRC review of the GEH application for final design approval and standard design certification of the ESBWR standard plant design pursuant to 10 CFR Part 52 (Reference 1).

Enclosure 1 contains proprietary information of the type that GEH maintains in confidence and withholds from public disclosure. The information has been handled and classified as proprietary to GEH as indicated in the enclosed affidavit required by 10 CFR 2.390(b)(1) (Enclosure 5). GEH hereby requests that the information in Enclosure 1 be withheld from public disclosure in accordance with the provisions of 10 CFR 2.390 and 9.17. Enclosure 2 is the non-proprietary version of the presentation slides, which do not contain proprietary information and are suitable for public disclosure.

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Enclosure 3 contains non-Proprietary materials presented to NRC during the course of the DOORS Software Audit. Enclosure 4 contains additional information requested by NRC as a result of their reviews during the audit.

If you have any questions or require additional information, please contact me.

Sincerely,

James C. Kinsey
Vice President, ESBWR Licensing

Reference:

1. MFN 05-084 - Letter from Steven A. Hucik, GE, to William D. Beckner, NRC, *General Electric Company Application for Final Design Approval and Design Certification of ESBWR Standard Plant Design*, dated August 24, 2005

Enclosures:

1. Presentation Materials Used During NRC Audit of DOORS Software (Proprietary version)
2. Presentation Materials Used During NRC Audit of DOORS Software (Non-Proprietary version)
3. Non-Proprietary Presentation Materials Used During NRC Audit of DOORS Software
4. Miscellaneous Supplemental Non- Proprietary Information Requested by NRC to Support NRC Audit of DOORS Software
5. Affidavit signed by David H. Hinds (GEH) dated January 21, 2008

cc:	AE Cubbage	USNRC (with enclosures)
	RE Brown	GEH/Wilmington (with enclosures)
	GB Stramback	GEH/San Jose (with enclosures)

Enclosure 2

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Presentation Materials Used During NRC Audit of DOORS Software

(Non-Proprietary Version)

The information in the documents in Enclosure 1 are essentially all marked proprietary. The non-proprietary versions would be cover sheets with blank pages. Based on this, no non-proprietary version will be supplied with this letter.

Enclosure 3

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Non- Proprietary Presentation Materials Used During NRC Audit of DOORS Software

DOORS Fundamentals

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What is "DOORS" anyway?

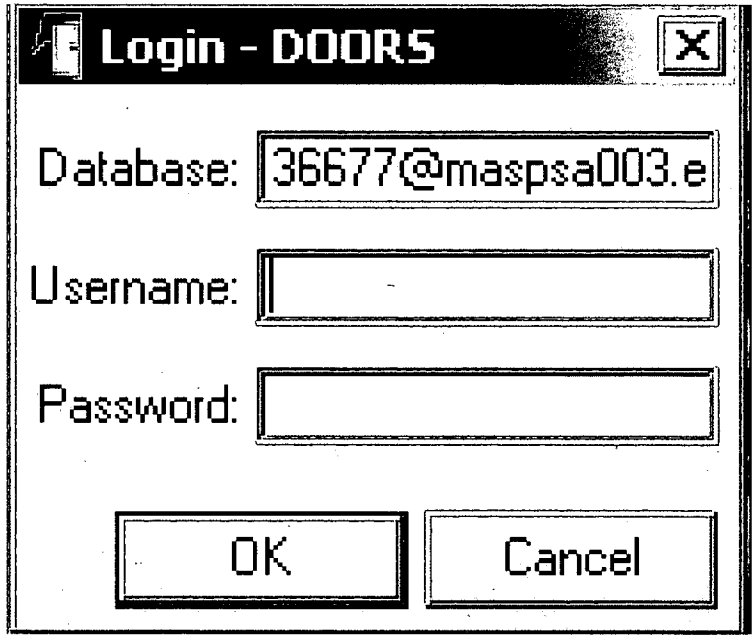
- DOORS is the world's leading requirements management application that provides word processing and spreadsheet features combined within the same document.
- DOORS provides the ability to associate information between documents via links similar to hyperlinks as used in Word or on the WEB.
- DOORS provides revision history feature that allows you to track changes to information and to reconstruct or compare changes over time.
- DOORS provides a means to generate traceability reports and real time navigation for verification needs or for impact analysis.

Starting and Logging In

guest1

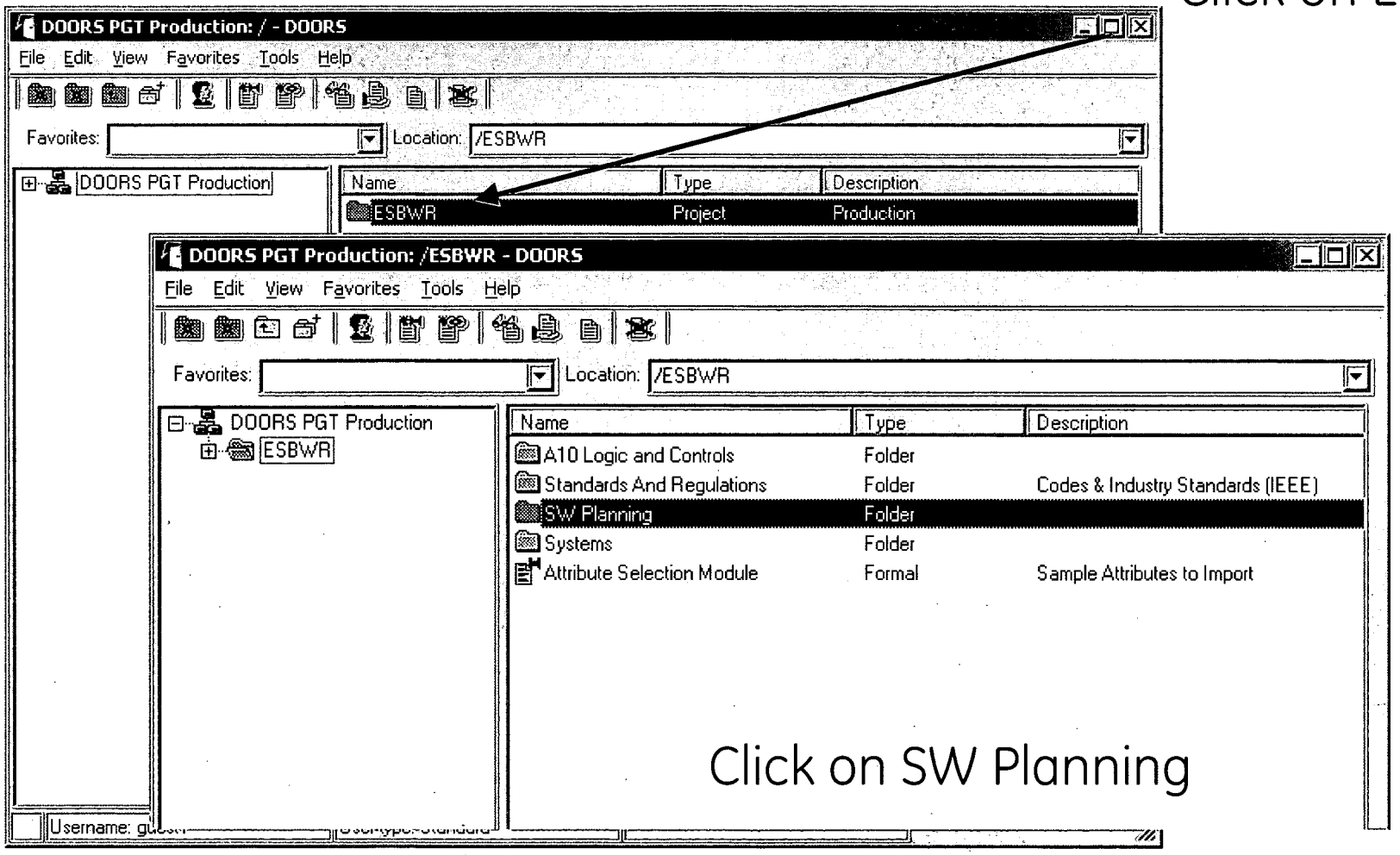
guest2

guest3



DOORS Explorer Window/Tree

Click on ESBWR



Click on SW Planning

Icons help identify the type of object.

Folder Project Module

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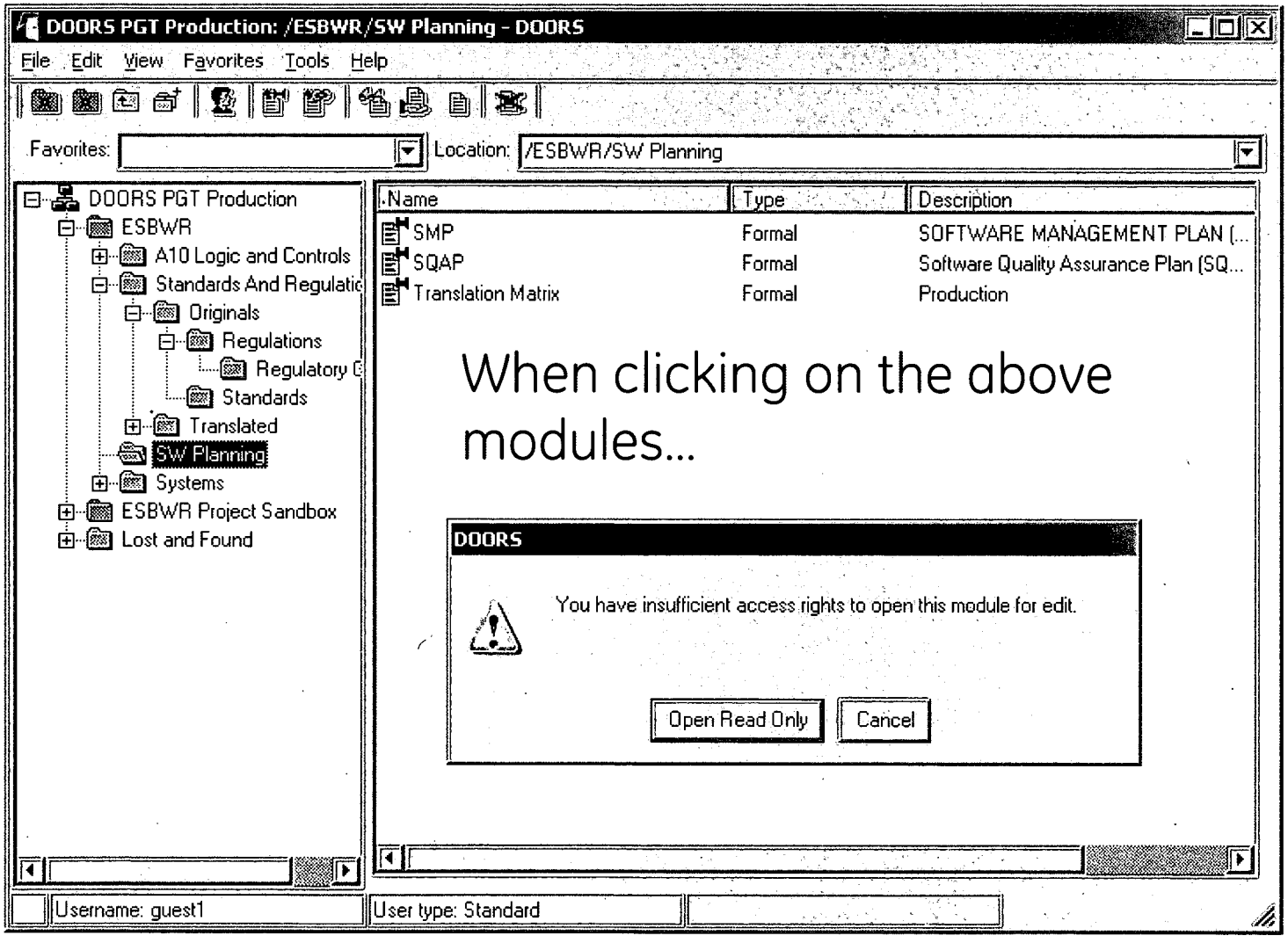
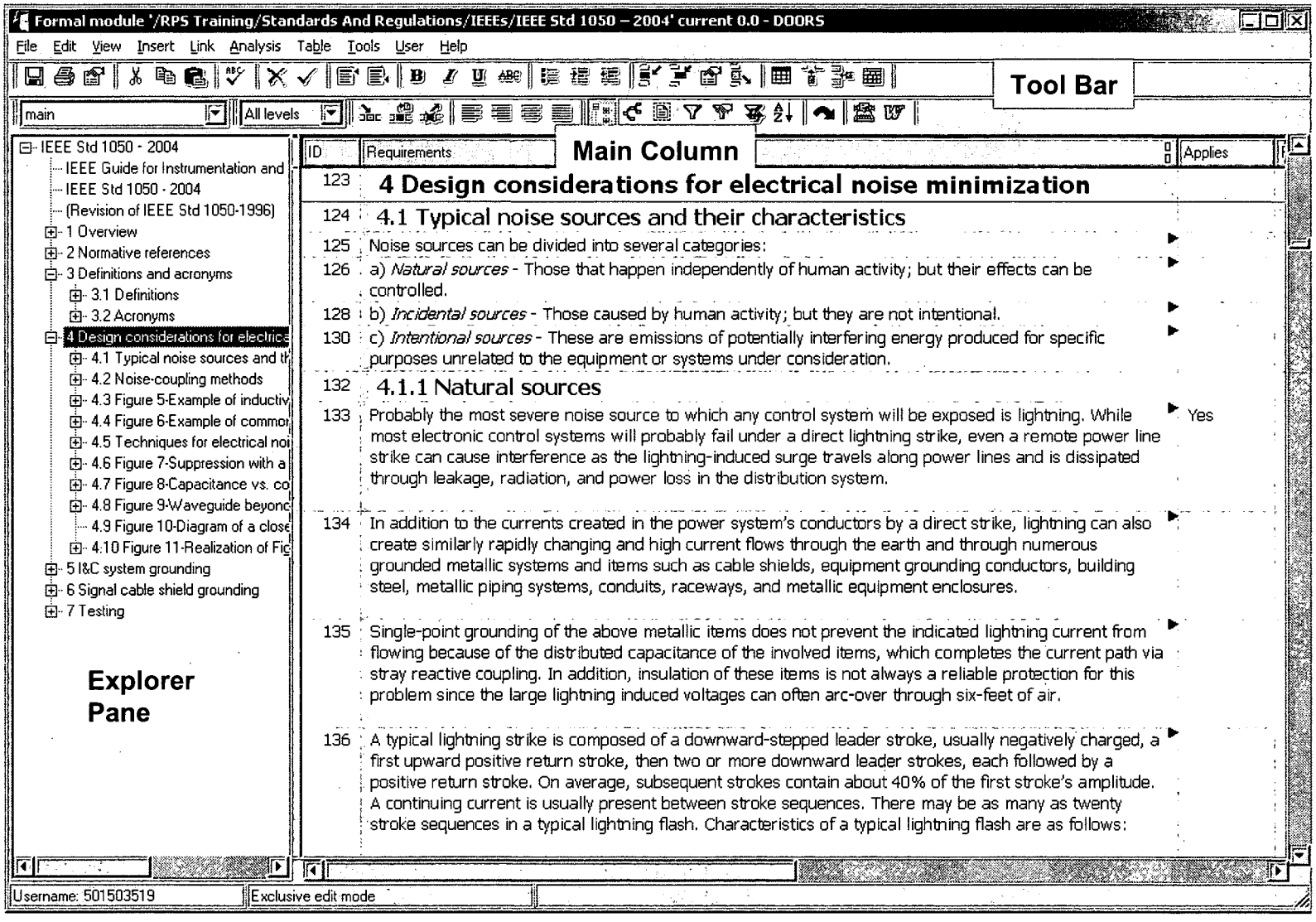
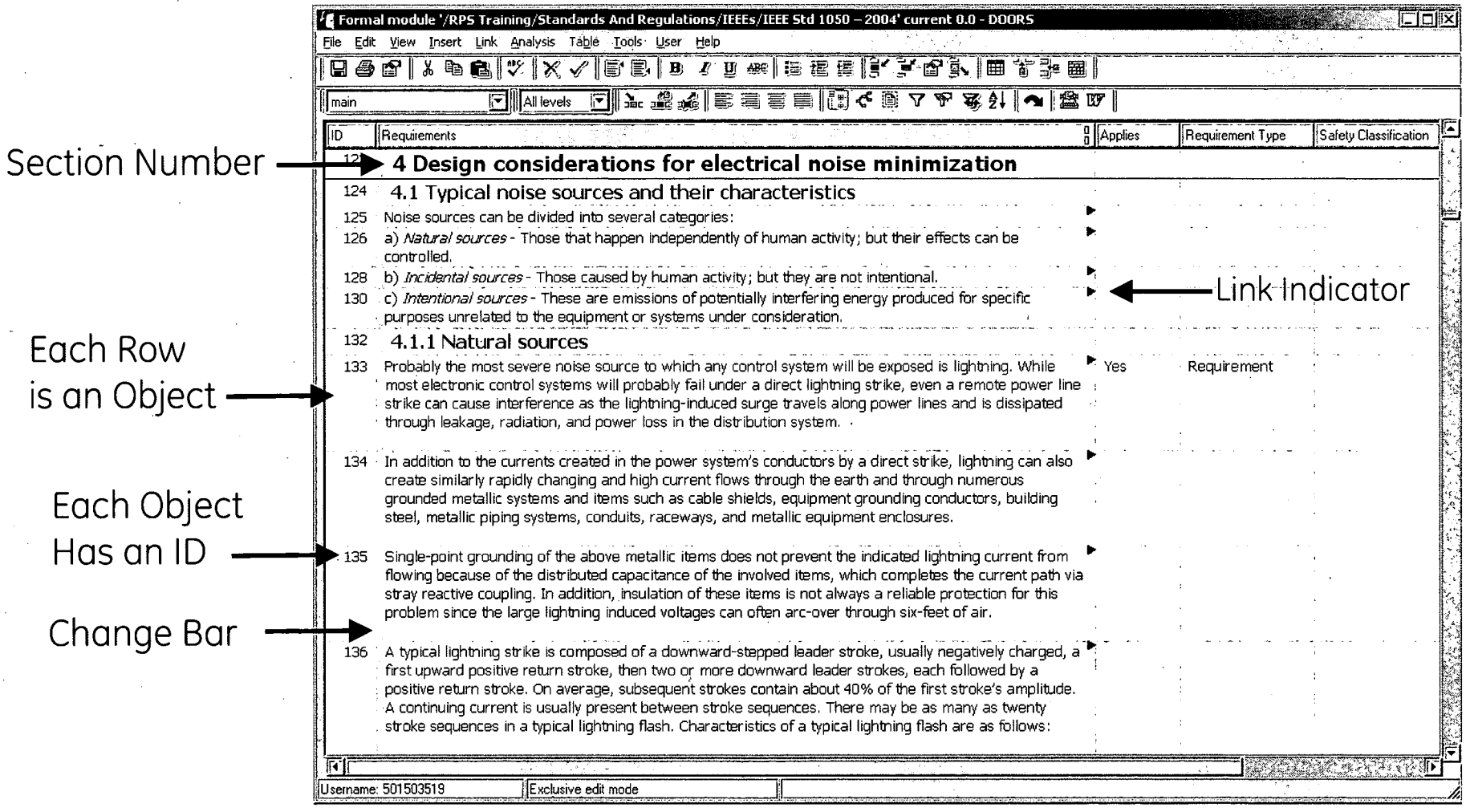
SW Planning Folder



What You See When Opening a DOORS Document



What You See When Opening a DOORS Document



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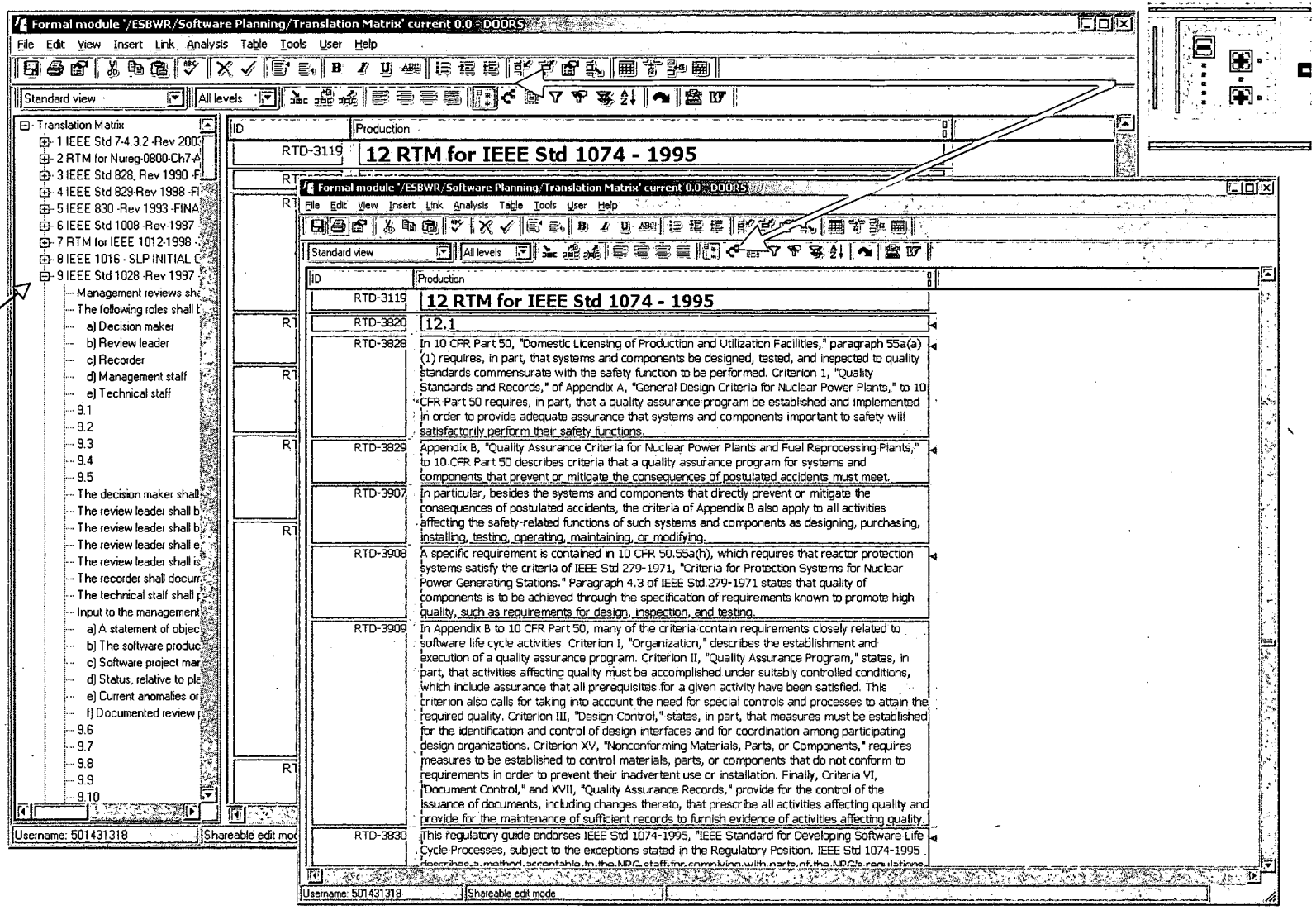
Document Navigation

Module Explorer

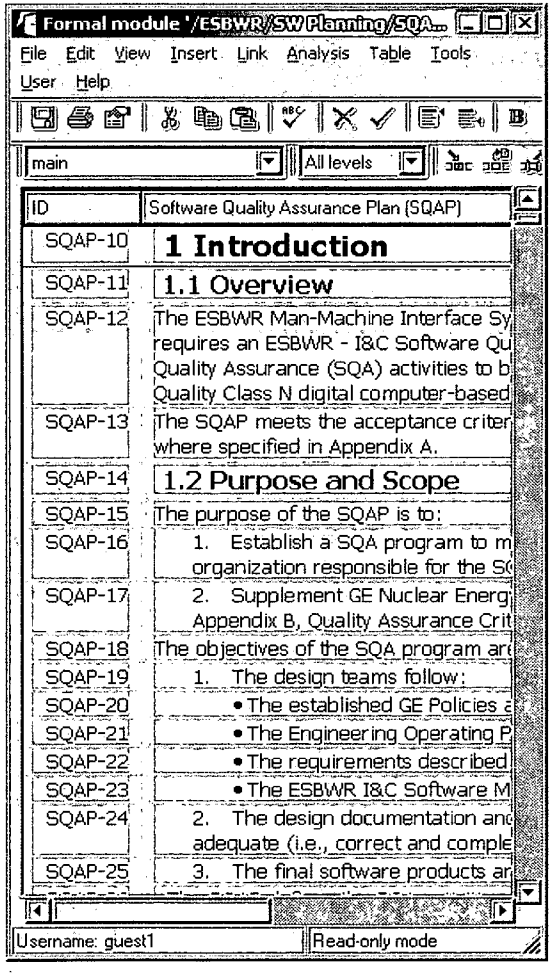
Explorer Toggle



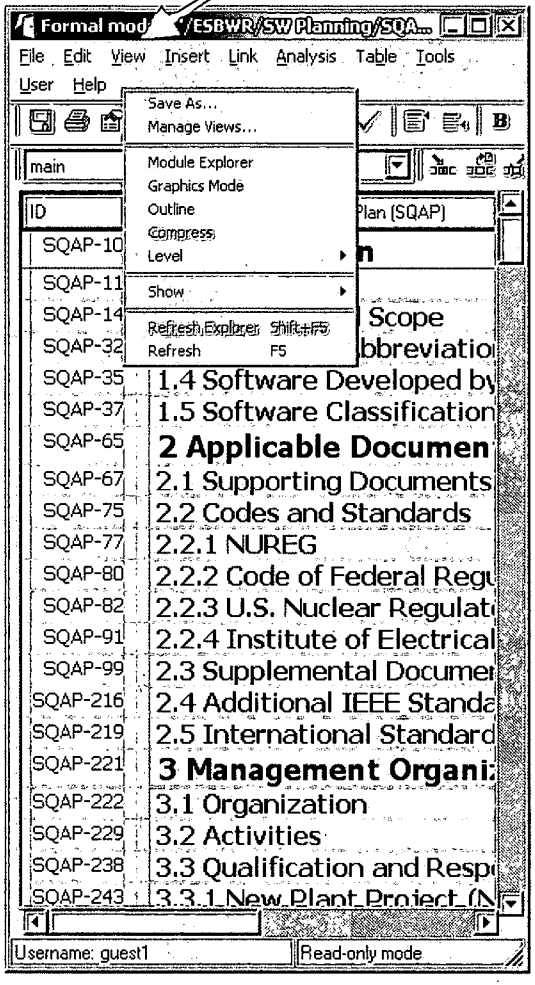
Click on Explorer Section to Navigate

Navigating a DOORS Module-Display Modes

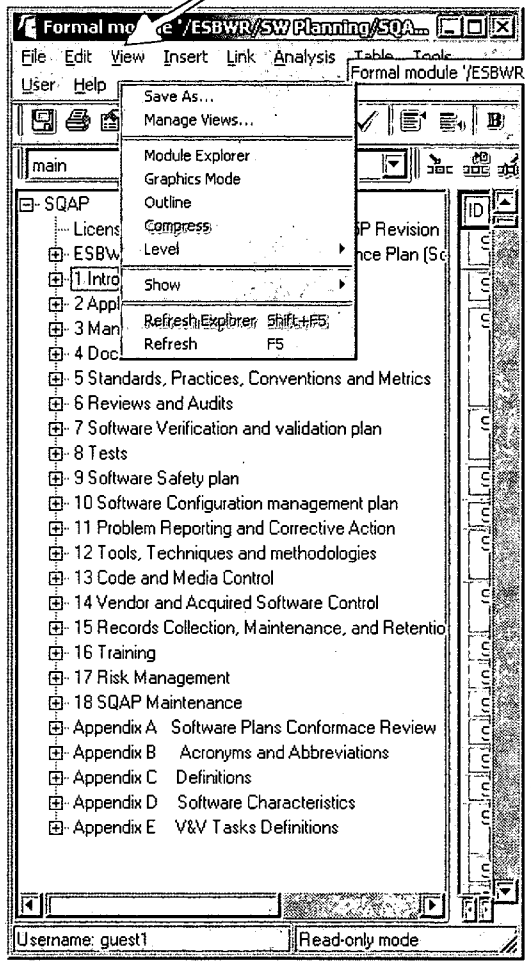
Normal



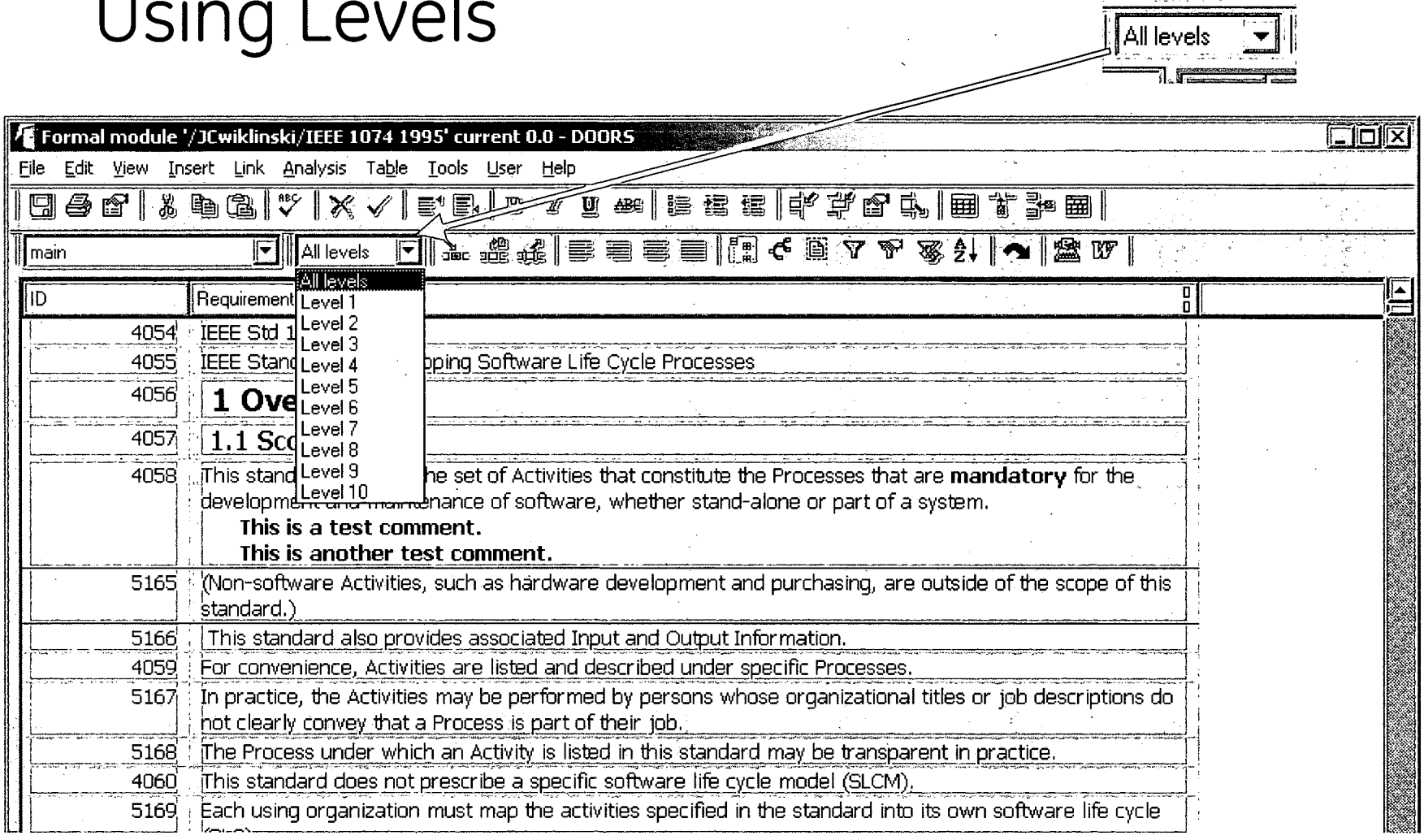
View - Outline



View - Module Explorer



Using Levels



Levels are very helpful in finding particular sections in very large documents. Select the level, then select a section. Select "All Levels to see everything within the section.

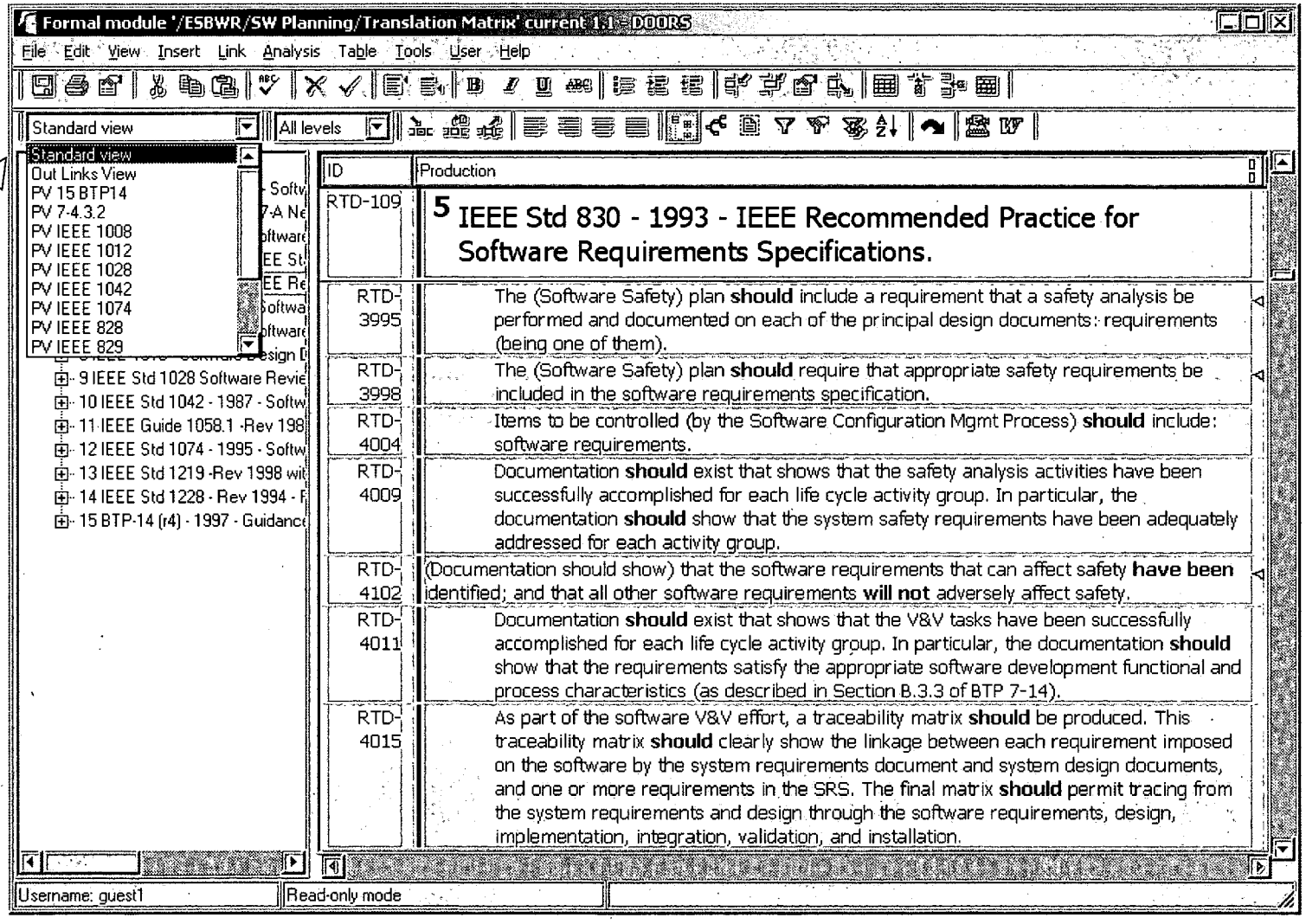
Searching and Sorting Modules

Searching and sorting are similar to the search found in Word and Excel and the sort found in Excel. These features allow you to look for specific information in a document or to look at information sorted by a value.

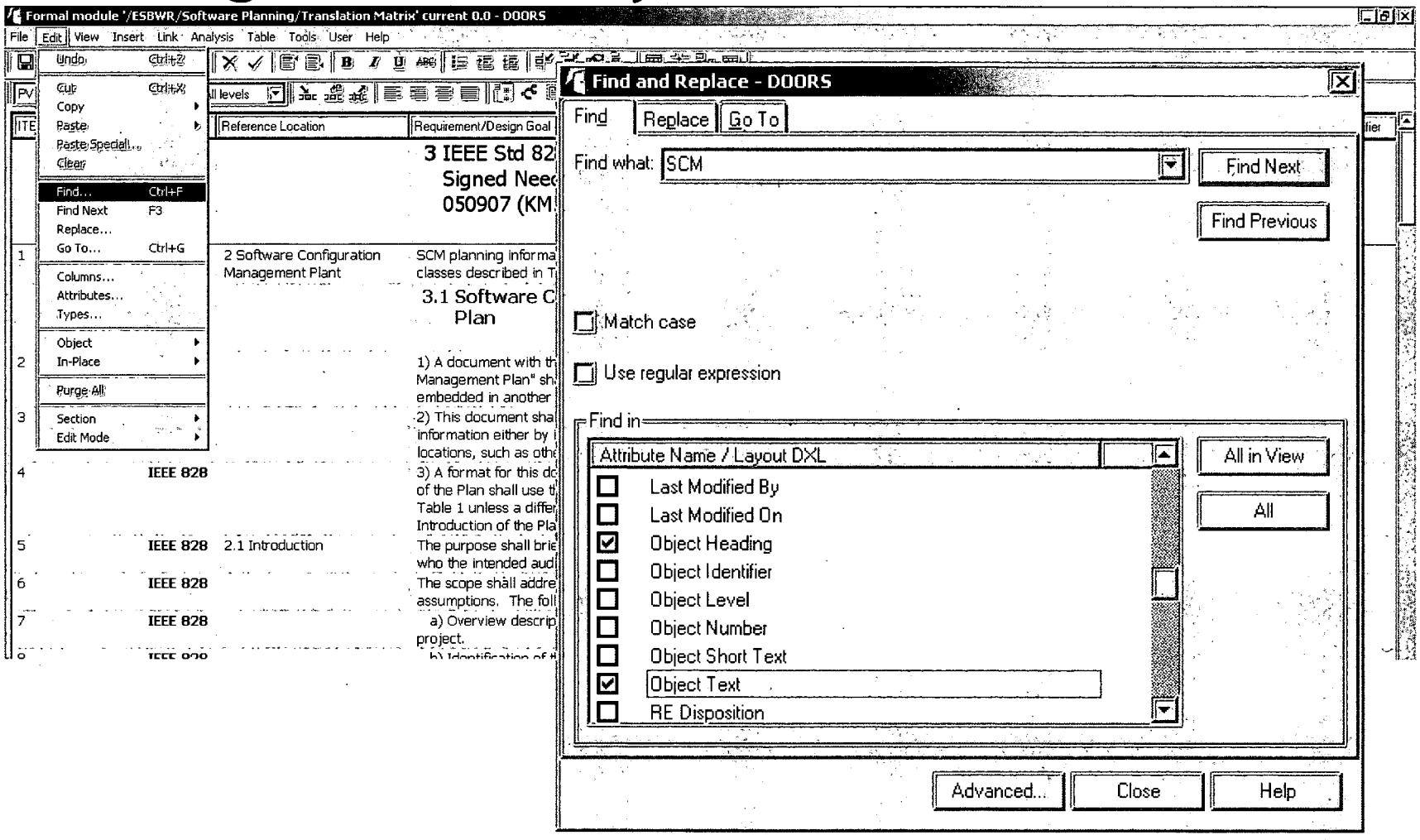
imagination at work

Preferred Views of the Translation Matrix

Click on Drop Down Box to select your PV IEEE



Using Find Utility



The 'Find' utility allows you to search specific attributes for key values.

LINKS

About Traceability

- DOORS lets you link together related information
- Links give you traceability
- Links can be followed in both directions
- Links allow us to manage change

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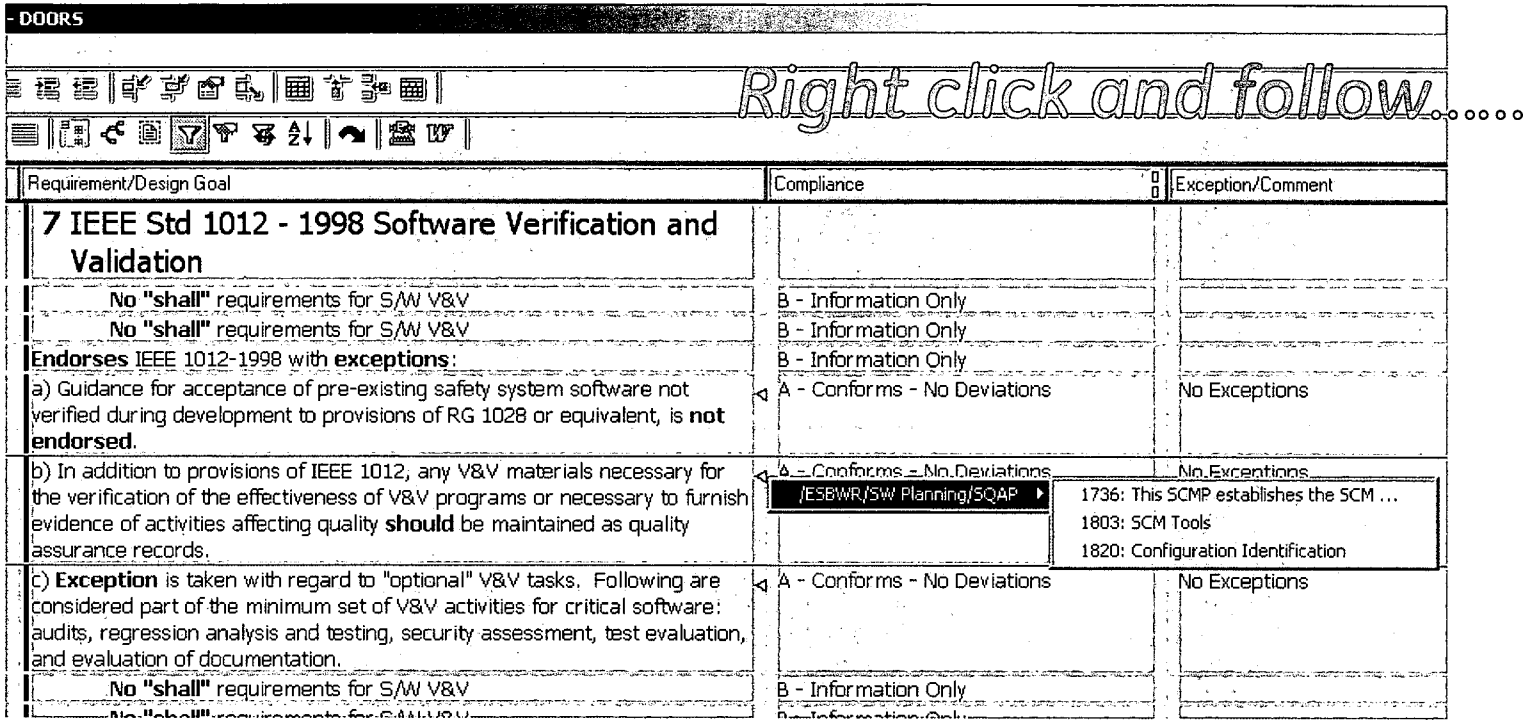
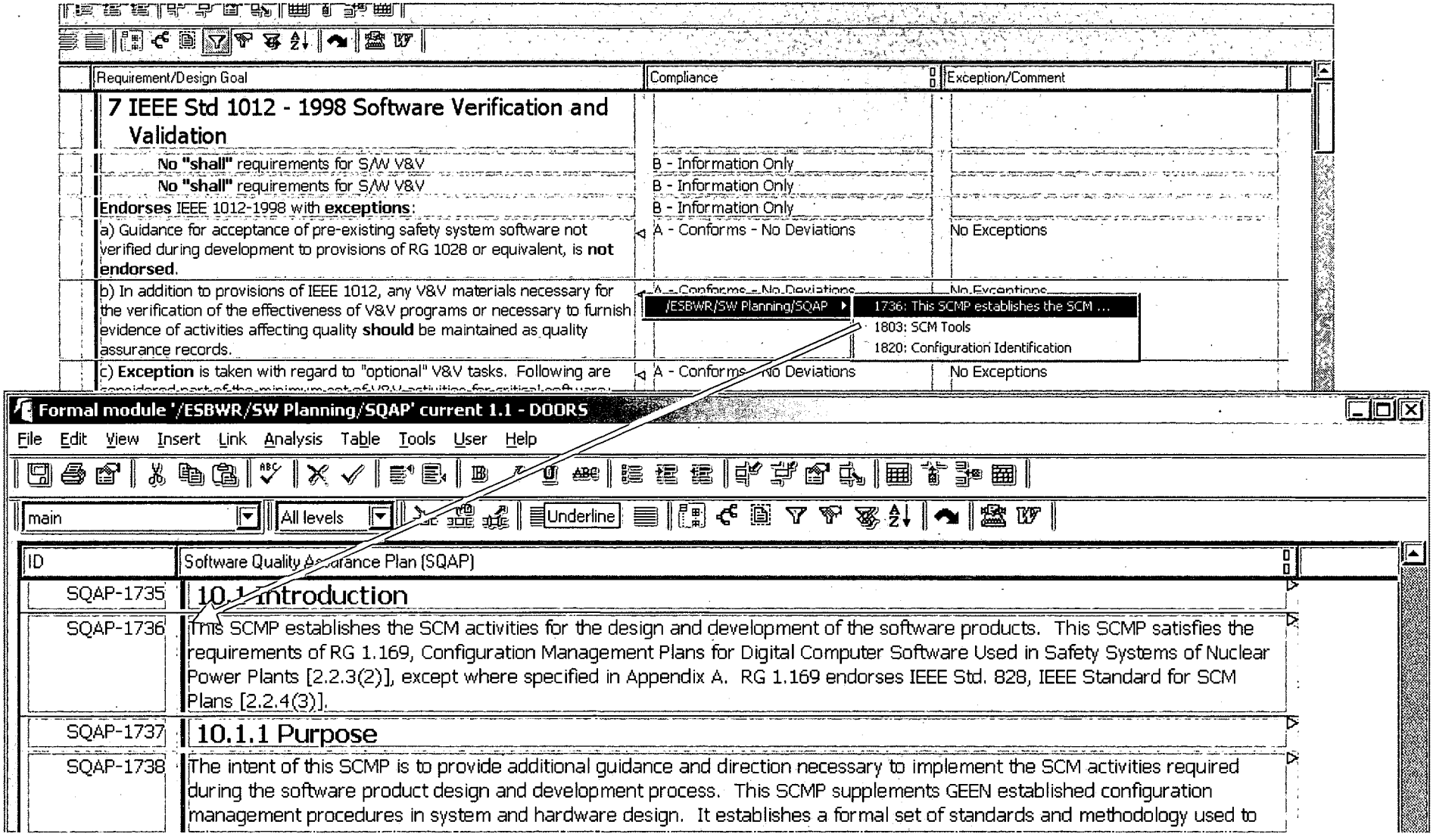
Navigating Links

To Trace the link.

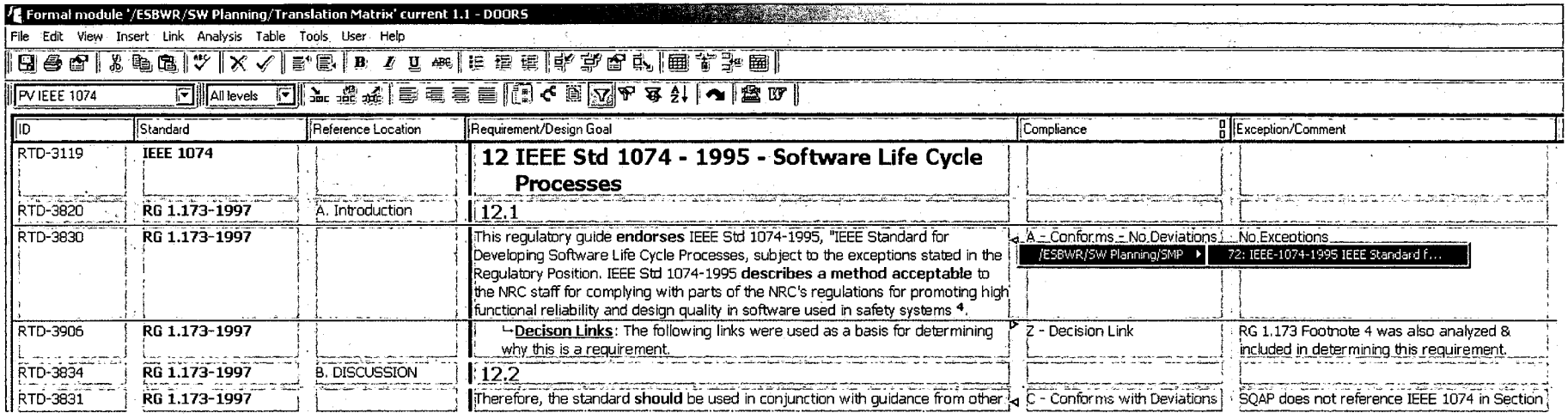


Links can be navigated using the link indicator. Select the Orange triangular Link Indicator using your RIGHT mouse button. A list of the links will appear. By navigating the list and moving to the right of each list entry you may use your RIGHT mouse button to open the document which is linked.

Navigating Through

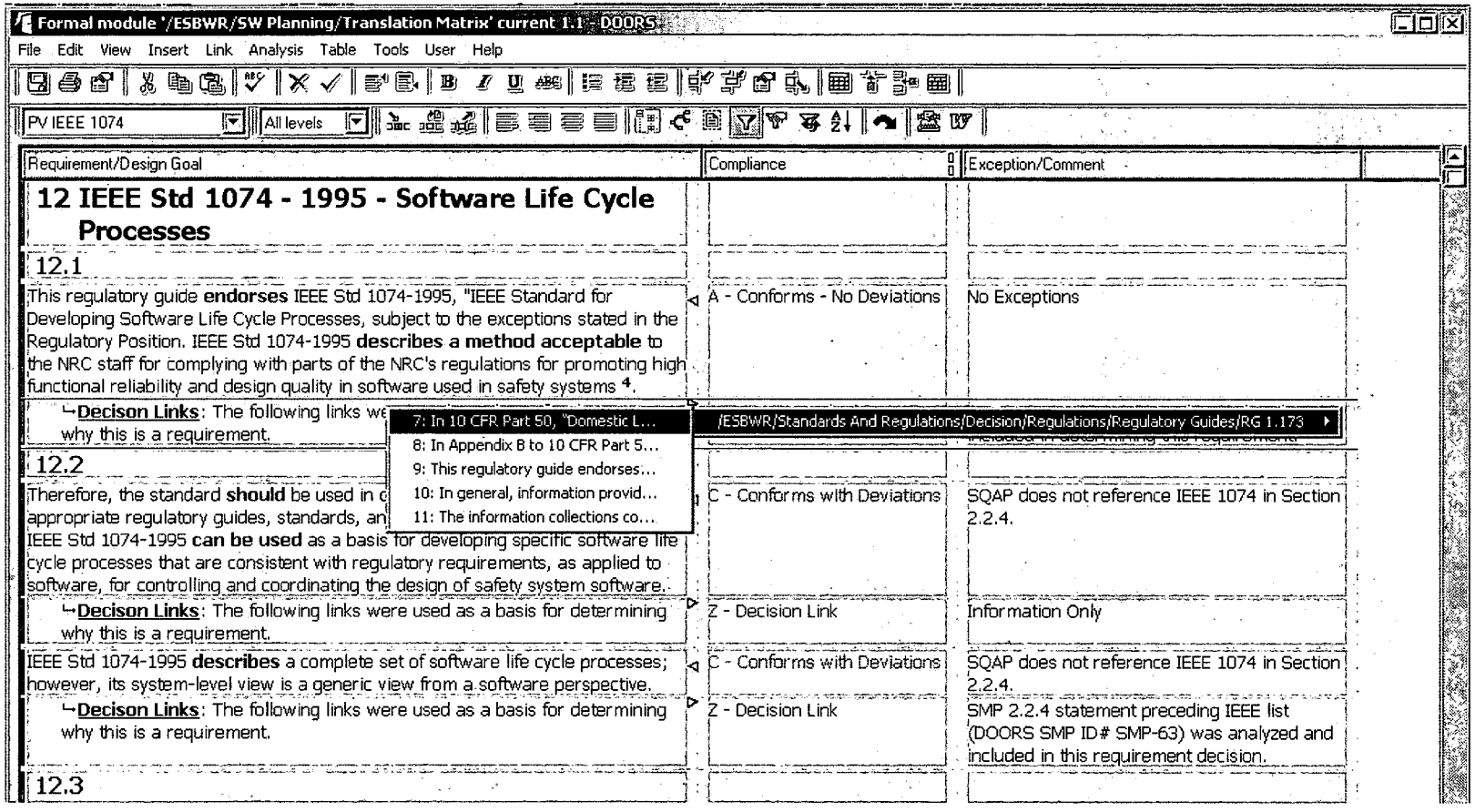


Decision Links



- In the RTM, there are two types of links in the Requirement/Design Goal Column (orange & red).
- The Decision Link is clearly identified by the drop down selection in the Compliance column.
- Additionally, the Exception/Comment field can also be used to further clarify an analyst's position (as shown).

Decision Links



Then, by right click (mouse) on the Decision Link outbound arrow, one can view all decision links associated with determination of this particular requirement.

Decision Links Cont.

•What is the basis? Decision Links were devised to assist the RTM analysis effort in capturing the analyst's thoughts on a particular decision regarding a requirement. Such as:

- Is a particular statement a requirement? The RTM Compliance column reflects this decision. Yes or No, the Decision Link object is used to clarify that position. (A "No" answer normally means exclusion from the RTM. But in certain cases, Information Only analyzed statements are included in the RTM, with Decision Links, for clarification)

- Is not enough information available? Then, additional research is required with corresponding Decision Links. The RTM Compliance column also reflects this decision.

•Linking back to the Standard and/or Regulation, through the Decision Link, allows the RTM to remain simple, yet all information is just a mouse click away.

•Works efficiently with the DOORS Filtering or Report process. No difference than any other DOORS feature.

•Enhances the overall GEH ESBWR RTM analysis effort.

The End

Enclosure 4

MFN 07-627

Miscellaneous Supplemental Non- Proprietary Information Requested by NRC to Support NRC Audit of DOORS Software

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
1	SQAP	General	Formatting of Headers 1.1, 1.2, 1.3, 1.4, 1.5, 2.1, 2.2, 2.3 2.4, 2.5,… are Cap letter followed by small letters while all other headers are all capitalized. **1.0 INTRODUCTION** **1.1 Overview** **2.2.2 CODE OF FEDERAL REGULATIONS (CFR)** ***3.3.5.1 SPE MANAGER***		JMH	7/7/2007	
2	SQAP	Table 1.5-1	Should include personal injury in accident discussion.		JMH	7/7/2007	
3	SQAP	2.3	Supplemental document table should start on same page. (Formatting)		JMH	7/7/2007	
4	SQAP	2.3	Supplemental document table – correct alignment for Nuclear Energy policies (Formatting)		JMH	7/7/2007	
5	SQAP	4.0	Correct "This SMP [2.3(1)]" to "This SQAP [2.3(1)]. Incorrect document referenced.		JMH	7/7/2007	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
6	SQAP	7.1.2	The first sentence "This SVVP outlines the formal set of standards and procedures necessary to comprehensively verify and Software Class Q and Software Class N3 and N2 software products during all phases of the software life cycle. The software life cycle phases in the SVVP correspond with those defined in the SMP [2.3(1)]. Should read: "This SQAP outlines the formal set of standards and procedures necessary to comprehensively verify and validate Class Q, N3 and N2 software products during all phases of the software life cycle. The software life cycle phases in the SQAP correspond with those defined in the SMP [2.3(1)]."		JMH	7/7/2007	
7	SQAP	7.4.7	Include summary to describe the basis for the selected Software Integrity Level (SIL). This a requirement of IEEE-1012 Section 4.1.5		JMH	7/7/2007	
8	SQAP	1.2.1	Needs to specifically state "...per 10CFR 50 Appendix A" just like 1.2.2 does for 10CFR50 Appendix B.		JCC	08/01/2007	
9	SQAP	2.2.4	SQAP that I am working with in DOORS is missing references to some IEEE standards, including 1074. These would be listed in Section 2.2.4 (Institute of Electrical and Electronic Engineers (IEEE) Standards). When compared to the SMP Section 2.2.4, it appears that 1074, 7-4.3.2-2003, 1008-1987, and 830-1993 are not included in the SQAP. Currently I link to the Section SQAP header, rather than specific verbiage.		JCC	08/01/2007	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
10	SQAP	2.4	DOORS SQAP Section 2.4 (Additional IEEE Guidance), the SQAP lists 1228-1994, only, whereas the SMP Section 2.4 lists an additional 6 IEEE Standards.		JCC	08/01/2007	
11	SQAP	1.5	The decision tree for software classification should include a decision block that asks "Is the software going to reside on a Safety related platform?" if so, then the Software Classification shall be Safety Related.		JMH	9-19-2007	
12	SQAP	1.5	The last paragraph in this section is lost on a page after the Software Classification Decision Tree. It can easily be overlooked.	Move paragraph to before decision tree.	JMH	9/19/2007	
13	SQAP	7.3.4.7	V&V Output sub paragraph should be labeled "a." for consistency.		JMH	9/19/2007	
14	SQAP	7.3.7.4	Sub paragraph 3. V&V Outputs: Sub paragraph "a." and "c." should be labeled "a" and "b".		JMH	9/19/2007	
15	SQAP	7.3.7.6	Sub paragraph 2. V&V Tasks sub paragraph "e." should be labeled "d".		JMH	9/19/2007	
16	SQAP	8.0	Section "8.0 Tests" has two sub paragraphs 1, 2, 3, and 4.		JMH	9/19/2007	
17	SQAP	8.0	Section "8.0 Tests" second sub paragraph 2 has two sub paragraph "ii." One for "Interface" and one for "Regression test".		JMH	9/19/2007	
18	SQAP	9.3.1.1	9.3.1.1 sub paragraph "bb." and "cc." Should be sub paragraph "b." and "c."		JMH	9/19/2007	
19	SQAP	9.3.3.1	9.3.3.1 sub paragraph "3 SSA Output" sub paragraph should be labeled "a." for consistency.		JMH	9/19/2007	
20	SQAP	9.3.3.2	9.3.3.2 sub paragraph "3 SSA Output" sub paragraph should be labeled "a." for consistency.		JMH	9/19/2007	
21	SQAP	14.0	Section 14.1 Vendor Control has three sub sections labeled 1 and 2.		JMH	9/19/2007	
22	SQAP	Table 2	Formatting is inconsistent across pages. Headers are in the middle of the page rather than the top in many cases.		JMH	9/19/2007	
23	SQAP	Table 2	The heading "Test" only includes software classification "Q". The "Installation" heading has "N2, N2, Q, N3, and N2"	Move related information from Part of "Installation N2 & N3" under the "Test" heading.	JMH	9/19/2007	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
24	SQAP	Table of Contents	"Section 7.0 Software Validation and verification." The word verification needs to be capitalized.		JMH	9/19/2007	
25	SQAP	Table of Contents	Some headings are all capitol letters while others are not.	Correct for consistency.	JMH	9/19/2007	
26	SQAP	1.5	Software classification does not discuss risk due to personal injury.		JMH	9/19/2007	
27	SQAP	6.2	Section 6.2 "Managerial Review" does not have correct numbering. Number 6.2 is missing.		JMH	9/19/2007	
28	SQAP	7.1.2	The wording for the first sentence needs to be corrected. "The SVVP outlines the formal set of standards and procedures necessary..." should read – "The SQAP SVVP outlines the formal set of standards and processes necessary..."		JMH	9/19/2007	
29	SQAP	7.3.1	The third paragraph is very wordy and needs to be edited.		JMH	9/19/2007	
30	SQAP	7.3.2	There are two sub paragraphs numbered 2. "V&V Tasks" and "Verify that the SDS...."	Eliminate second number "2" heading and put this verbiage under "2. V&V Tasks".	JMH	9/19/2007	
31	SQAP		Does not comply with IEEE-1012 Section 5.2.1, Acquisition support V&V. Includes Sections 5.2.1.1, 5.2.1.2, 5.2.1.3		JMH	10-10-07	RTD 2913 - 2916
32	SQAP	Appendix C	The definition of the word interface needs to include all four variations as defined in IEEE 610 and as requested by RG 1.172 and MPR review. The definition should be modified to include the additional NRC interpretation found in Reg Guide 1.172.	See requirement in translation matrix.	ST	10/24	RTD-115
33	SQAP	Appendix A	Since we classify requirements as safety or non-safety, we meet the requirement that "requirements be ranked by importance". IEEE comments on stability and necessity are suggestions and not requirements.	Remove exception noted in Appendix A of the SMP for IEEE 830-1993.	ST	10/26	RTD-129 RTD-169 RTD-171
34	SQAP	Various	Nowhere in the document is the requirement to verify the SRS for modifiability and style.	Each time the SQAP talks about verifying consistency with the SRS, it should also mention to verify modifiability and style. The links in the translation matrix for consistency will help you.	ST	10/28	RTD-4041 RTD-4042 RTD-133 RTD-173 thru RTD-176

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
35	SQAP	7 – IV&V Plan	The contents of section 5.4.7 of the SMP, Deferred Verification, is not discussed in the SQAP IV&V Plan	Discuss what must be done during IV&V for incomplete requirements. Also discuss what information must be included until the TBD condition is resolved.	ST	10/29	RTD-137 RTD-164 RTD-165 RTD-166
36	SQAP	7 – IV&V Plan	When the plan discusses checking for completeness, it does not mention how to handle requirements labeled TBD, To Be Determined.	Any SRS that uses the phrase "to be determined" (TBD) is not a complete SRS.	ST	10/29	RTD-164
37	SQAP	7.3.7.6	The statement that you will validate safety requirements during the Installation Configuration Audit seems out of place. It should not be there.	The statement needs to be removed or rewritten so that it concerns itself with installation configuration activities only.	ST	11/1	RTD-1084
38	SQAP	Various	SMP and SQAP talk about cyber security but they do not classify the security threats according to impact on safety and likelihood of occurrence..	Add the requirement that identified security threats need to be classified according to their impact on safety and likelihood of occurrence. Use DOORS links to find needed sections.	ST	11/1	RTD-141 RTD-4029
39		General	There are spelling errors throughout the RTM.		JMH	11/2/07	
40		General	Many of the IEEE 1012 requirements have been identified as being "below commitment level to the NRC. The CTS will be written to be ensure the ESBWR Work Instructions adequately evaluate this detail." It is unclear if the issues have been identified in the Commitment Tracking System (CTS).		JMH	11/2/07	
41		RG 1.152	RTM does not clearly state the traceability to RG 1.152 or the NRC's endorsement of IEEE Std 7-4.3.2-2003 for software quality, Security, or the software life cycle.		JMH	11/2/07	
42		RG 1.168	RTM does not clearly state that the NRC's endorsement of IEEE 1012 is for Safety Related software only and thereby being traceable to 10CFR50 Appendix B.		JMH	11/2/07	
43		RTM / RG1.152 Item 4	The SW classification process does not take residence of software fully in to account.	Modify process and figure to ensure that NSR software that resides on SR computers is re-classified as SR per requirement.	JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
44		RG 1.168 C. Regulatory Position	RTM states: "Endorses IEEE 1012-1998 with exceptions:" However, all of the NRC's exceptions are not listed in the RTM. Note: These exceptions only apply to Safety Related software and tools used to develop that software. i.e. RG 1.168 Critical Software – "Software used in nuclear power plant safety systems should be assigned integrity level 4 or equivalent, as demonstrated by a mapping between the applicants or licensee approach and integrity level 4 as defined in IEEE Std 1012-1998."		JMH	11/2/07	
45		General	The RTM does not clearly map requirements from IEE Std 1012 using page and paragraph number. This makes it difficult to locate the delineated requirement to the source document.		JMH	11/2/07	
46		RTM Item 14	Software Integrity Levels (IEEE-1012 4.1.5 pg 9). "The basis for assigning software integrity levels to software components shall be documented in a V&V Task report and V&V Final Report." Requirement not addressed.		JMH	11/2/07	
47		RTM Item 31	Acquisition Support V&V (IEEE-1012 5.2.1 pg 11) "The V&V effort shall perform, as appropriate for the selected software integrity level, the minimum V&V tasks for Acquisition Support V&V from the following list:" No Acquisition support requirements addressed see No.'s 10, 11, and 12 below.		JMH	11/2/07	
48		RTM Item 32	Acquisition Support V&V (IEEE-1012 5.2.1.1 pg 11) "a) Scoping the V&V Effort" Requirement not addressed.		JMH	11/2/07	
49		RTM Item 33	Acquisition Support V&V (IEEE-1012 5.2.1.2 pg 11) " b) Planning the interface between the V&V Effort and Supplier" Requirement not addressed.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
50		RTM Item 34	Acquisition Support V&V (IEEE-1012 5.2.1.3 pg 11) "c) System Requirements Review." Requirement not addressed.		JMH	11/2/07	
51		RTM Item 50	Requirements V&V (IEEE-1012 5.4.2.5 pg 12) "e) System V&V Test Plan Generation and Verification." Requirement not addressed.		JMH	11/2/07	
52		RTM Item 51	Requirements V&V (IEEE-1012 5.4.2.6 pg 12) "f) Acceptance V&V Test Plan Generation and Verification" Requirement not addressed.		JMH	11/2/07	
53		RTM Item 62	Design V&V (IEEE-1012 5.4.3.7 pg 12) "h) V&V Test Design Generation and Verification" Requirement not addressed.		JMH	11/2/07	
54		RTM Item 71	Implementation V&V (IEEE-1012 5.4.4.6 pg 13) "V&V Test Procedure Generation and Verification" Requirement not addressed.		JMH	11/2/07	
55		RTM Item 72	Implementation V&V (IEEE-1012 5.4.4.7 pg 13) "Component V&V Test Execution and Verification" Requirement not addressed.		JMH	11/2/07	
56		RTM Item 96	Operation V&V (IEEE-1012 5.5.1.3 pg 15) "Operating Procedures Evaluation" Requirement not addressed.		JMH	11/2/07	
57		RTM Item 99	Process: Maintenance (IEEE-1012 5.6 pg 15) "Modifications of the software shall be treated as development processes and shall be verified and validated as described in 5.1(Management Process) and 5.4(Development Process) of this standard." Requirement not addressed.		JMH	11/2/07	
58		RTM Item 101	Process: Maintenance (IEEE-1012 5.6 pg 15) "The software integrity level assignments shall be revised as appropriate to reflect the requirements of the maintenance process." Requirement not addressed.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
59		RTM Item 102	Maintenance V&V (IEEE-1012 5.6.1 pg 15) "For migrating software, the V&V effort shall verify that the migrated software meets the requirements of 5.4(Development process) through 5.5(Operation process)." Requirement not addressed.		JMH	11/2/07	
60		RTM Item 103	Maintenance V&V (IEEE-1012 5.6.1 pg 15) "If the software was verified under this standard, the standard shall continue to be followed in the maintenance process." Requirement not addressed.		JMH	11/2/07	
61		RTM Item 104	Maintenance V&V (IEEE-1012 5.6.1 pg 15) "If the software was not verified under this standard and appropriate documentation is not available or adequate, the V&V effort shall determine whether the missing or incomplete documentation should be generated." Requirement not addressed.		JMH	11/2/07	
62		RTM Item 117	V&V Reporting (IEEE-1012 6.1 pg 16) "The V&V reports shall consist of required V&V reports (i.e., V&V Task Reports, V&V Activity Summary Reports, V&V Anomaly Reports, and V&V Final Report.)" Does not address V&V Task Reports or Activity Summary Reports.		JMH	11/2/07	
63		RTM Item 136	SVVP Definitions (IEEE-1012 7.2 pg 18) "The SVVP shall define or reference all terms used in the SVVP, including the criteria for classifying an anomaly as a critical anomaly." Does not contain requirement for referenced terms in the SVVP. Should probably reference an EOP for document development. In Section 7.2.		JMH	11/2/07	
64		RTM Item 137	SVVP Definitions (IEEE-1012 7.2 pg 18) "All abbreviations and notations used in the SVVP shall be described." Does not contain requirement for abbreviations and notations in the SVVP. Should probably reference an EOP for document development in Section 7.2.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
65		RTM Item 148	Software Integrity Level Scheme (IEEE 1012 7.4.3 pg 18) "SVVP shall document the assignment of software integrity levels to individual components where there are differing software integrity levels assigned within the program." Requirement not addressed.		JMH	11/2/07	
66		RTM Item 149	Software Integrity Level Scheme (IEEE 1012 7.4.3 pg 18) "For each SVVP update, the assignment of software integrity levels shall be reassessed to reflect changes that may occur in the integrity levels as a result of architecture selection, detailed design choices, code construction usage, or other development activities." Although sections 7.3.1, 7.3.1.1 refer to SVVP generation and update, reassessment of software integrity levels in not addressed.		JMH	11/2/07	
67		RTM Item 150	Resource Summary (IEEE 1012 7.4.4 pg 19) "SVVP shall summarize the V&V resources, including staffing, facilities, tools, finances, and special procedural requirements." SQAP 7.2.4 summarizes and refers to resources for IVVT and BRT. However, there is no similar reference for the Design Team. Also facilities, finances and special procedural requirements are not addressed.		JMH	11/2/07	
68		RTM Item 151	Responsibilities (IEEE 1012 7.4.5 pg 19) "SVVP shall identify an overview of the organizational element(s) and responsibilities for V&V tasks." References to IVVT and SQA Manager are not correct. There is no similar reference to DT. What is meant by "The project letter" is not clear.		JMH	11/2/07	
69		RTM Item 154	Tools, techniques, and methods (IEEE 1012 7.4.6 pg 19) "Tools that insert code into the software shall be verified and validated to the same rigor as the highest software integrity level of the software." Requirement not addressed.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
70		RTM Item 155	Tools, techniques, and methods (IEEE 1012 7.4.6 pg 19) "Tools that do not insert code shall be verified and validated to assure that they meet their operational requirements." Requirement not addressed.		JMH	11/2/07	
71		RTM Item 156	Tools, techniques, and methods (IEEE 1012 7.4.6 pg 19) "If partitioning of tool functions can be demonstrated, only those functions that are used in the V&V processes shall be verified to demonstrate that they perform correctly for their intended use." Requirement not addressed.		JMH	11/2/07	
72		RTM Item 159	Software Life Cycle (IEEE 1012 7.5.1 pg 19) "SVVP shall include sections 5.1 through 5.6 for V&V activities and tasks as shown in SVVP Outline (boxed text)." Not all IEEE processes are mapped directly. Operations and maintenance have been combined in SQAP section 7.3.8. Some are missing including acquisition.		JMH	11/2/07	
73		RTM Item 162	Software Life Cycle (IEEE 1012 7.5.1 pg 19) "The SVVP shall describe the methods and procedures for each task, including on-line access, and conditions for observation/evaluation of development processes." Online access is not described except through the use of EOPs that require use of ematrix; the methods are deferred to other reports or standards, but are not discussed in the SQAP document on a task by task basis. Observation of the development process is not addressed in the SQAP.		JMH	11/2/07	
74		RTM Item 163	Software Life Cycle (IEEE 1012 7.5.1.2 pg 20) "SVVP shall define the criteria for evaluating the task results." Not specifically defined. May be done in the test plans but should be mentioned in SQAP.		JMH	11/2/07	
75		RTM Item 169	Software Life Cycle (IEEE 1012 7.5.1.5 pg 21) "SVVP shall describe the schedule for the V&V task." Requirement not addressed.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
76		RTM Item 170	Software Life Cycle (IEEE 1012 7.5.1.5 pg 21) "SVVP shall establish specific milestones for initiating and completing each task, for the recipt and criteria of each input, and for the delivery of each output." Requirement not addressed.		JMH	11/2/07	
77		RTM Item 172	Software Life Cycle (IEEE 1012 7.5.1.6 pg 21) "SVVP shall specify resources by category. (e.g., staffing, equipment, facilities, travel, and training.)" Requirement not fully addressed.		JMH	11/2/07	
78		RTM Item 174	Software Life Cycle (IEEE 1012 7.5.1.7 pg 21) "SVVP shall provide recommendations to eliminate, reduce, or mitigate risks." Process for mitigating risk not addressed.		JMH	11/2/07	
79		General	The abbreviations "SMP" and "SCMP" are used interchangeably throughout NEDE-33226 & NEDE-33245 to refer to NEDE-33226. All uses of "SCMP" to refer to NEDE-33226 should be changed to "SMP".		JMH	11/2/07	
80		NEDE-33245 section 7.3.4.2.2	Letters in subsection are out of sequence and need to be corrected / re-ordered in sequence.		JMH	11/2/07	
81		NEDE-33245 sections 7.3.4.8.1.e and 7.3.5.2.1.d	The term "Software Coding and Conventions Guideline Document" is missing the word "Coding". This term should be made consistent with its use in corollary procedure NEDE-33226.		JMH	11/2/07	
82		NEDE-33245 section 3.3.1 and 3.3.3	SQAP sections 3.3.1 and 3.3.3 both refer to responsibilities of the NPP Quality manager. While they say different things, the specified duties overlap. These two sections should be edited and merged into one section.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
83		NEDE-33245 sections 7.3.1 thru 7.3.8	These sections are very wordy in describing V&V lifecycle activities. An enhancement may be in order. See example tables to replace these sections These tables are located in a WORD file call < Life Cycle V&V Activities.doc > at < M:\ESBWR_Gen_Desc\ESBWR Requirements Traceability Matrix Project for IEEE to SMP and SQAP\Comments\Revision 3 >.		JMH	11/2/07	
84		NEDE-33245 section 8.0 step 2 subsections b.i through b.vi	Subsections b.i through b.vi should be subsections b.i through b.vii. The number "ii" is repeated twice for two different things: interface test and regression test.		JMH	11/2/07	
85		NEDE-33245 section 8.4	The last sentence in section 8.4 of NEDE-33245 says: Test documentation requirements described in Section 8.2 shall be used in preparing SAT test documents This should say: Test documentation requirements described in Section 8.5 shall be used in preparing SAT test documents Section 8.2 is on the SFAT, not SAT test documentation.		JMH	11/2/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
86		NEDE-33245 Section 8.1	Section 8.1 in NEDE-33245 SQAP says in part: The IVVT is responsible for the preparation of the Validation Test Plan, Test Procedure, and Test Cases Specification This section makes no differentiation with regard to software class. Shouldn't the Design Team be responsible for these with regard to class N3 & N2 software? Why have the IVVT do N3 preps of an SVT plan? It's a waste of resources.		JMH	11/2/07	
87		NEDE-33245 Section 8.5.1	The test plan shall be independently verified as defined in Section 7.0, SVVP and placed under the CM control as described in Section 10.0, SCMP. Shouldn't this be just for Class Q software?		JMH	11/2/07	
88	SQAP	7.5.3	**Training feedback**: if deviation is allowed from the SQAP, shouldn't it be revised? Also, I see that that NUREG-0800 disallowed any deviation.		Greg Droba	11/26/07	
89	SQAP	7.4.5	**Training feedback**: I believe duplication of the same document in two different DRFs is a violation of the EOPs. If one is updated, the other may not be.		Greg Droba	11/26/07	
90	SQAP	9.3.1.1	**Training feedback**: Items 1(b) and 1(c) have typoes.		Greg Droba	11/26/07	
91	SQAP	Appendix Table 1	**Training feedback**: For each test activity / task, test results should be the output of test execution; then the test reporting should be a separate task where test results are an input.		Greg Droba	11/26/07	
92	SQAP	11.2	**Training feedback**: Last paragraph, CQA should be CAQ.		Greg Droba	11/26/07	
93	SQAP	7.3.3	Why isn't the system requirement specification listed as one of the documents that must be V&V during the requirement phase.	Verified that every document listed in the SMP is V&V at the proper time.	ST	11/3	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
94	SQAP	6.4.1	The functional audit recommends that the audit be performed for class N3 and N2 systems. Good software development demands that the audit be performed on all software regardless of class. The BRT need not do this but somebody should. Since N3 impacts safety, should this at least be mandated.		ST	11/3	
95	SQAP	Appendix A	For RG 1.170 and IEEE 829, add the following exception. Two entries in the table needs to be updated.	The sequence order of sections for each document found in IEEE 829 will not be followed. The justification for this is: Modern Tools and Techniques do not always allow themselves to follow the outline found in IEEE 829. When that is the case, the required information will be captured and displayed in a readable and understandable manor that is best for the tool/technique and the reader/users.	ST	11/5	
96	SQAP	Various	When the test documentation layout is discussed, add the following statement to that paragraph. See the RTD ID# for list of locations	RG 1.170 and IEEE 829 shall be followed … as amended by the exception in Appendix A … Modern Tools and Techniques do not always allow themselves to follow the outline found in IEEE 829. When that is the case, the required information will be captured and displayed in a readable and understandable manor that is best for the tool/technique and the reader/users.	ST	11/5	SQAP-1405 SQAP-1438 SQAP-1464 SQAP-1480 RTD-618 RTD-625 RTD-634 RTD-640 RTD-647 RTD-652 RTD-658 RTD-668
97	SQAP	Various	We need an implementing procedure for test documentation.	Write an implementing procedure to cover the parts of RG 1.170 and IEEE 829 not covered in the SMP and SQAP. Update SMP and SQAP to reference the implementing procedure.	ST	11/5	
98	SQAP	1.5	When we talk about software classification, we do not explicitly state that we will not have software which the NRC classification, Level 4 (malfunction causes death). Our process for classifying software does not check to see if the submitted software meets the definition of NRC Level 4. If we check the software and it meets the definition of NRC Level 4, then we need to reject that design.		ST	11/6	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
99	SQAP	8.5 thru 8.5.3	These sections will have to be modified to account for the fact that we will write an implementing procedure for IEEE 829 and RG 1.170.	Note: To keep the heading structure, change the names of the sub sections. Then all that will be necessary is to modify the contents of each section to compliment the implementing procedures. 8.5.1 Test Planning 8.5.2 Test Specification and Execution 8.5.3 Test Reporting	ST	11/7	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
1	SMP	Proprietary Information Notice	Broken sentence – The "except as specified above" clause is in the wrong place. Do you want the phase to apply to patented inventions as well? This document contains proprietary information of the General Electric Company (GE) and is furnished in confidence solely for the purpose(s) stated in the transmittal letter. No other use, direct or indirect, of the document or the information it contains is authorized. Furnishing this document does not convey any license, express or implied, to use any patented invention or **except as specified above**, any proprietary information of GE disclosed herein or any right to publish or make copies of the document without prior written permission of GE. The header of each page in this document carries the notation "GE Proprietary Information."	Suggested improvement – Place the phrase "except as specified above" after the word implied or at the beginning of the sentence.	ST	9/10/07	
2	SMP	Proprietary Information Notice	New Sentence – The word "figures" should be capitalized. GE proprietary information is identified by a dotted underline inside double square brackets. The electronic version includes a red font inside the brackets. For black-grayscale printed copies, the red font and dotted underline appears similar to normal text. [[This sentence is an example {3}]] **figures and large** equation objects are identified with double square brackets before and after the object. In each case, the superscript notation {3} refers to Paragraph (2) of the enclosed affidavit, which provides the basis for the proprietary determination. Specific information that is not so marked is not GE proprietary.		ST	9/10/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
3	SMP	Proprietary Information Notice	The stated purpose appears to be very limited. Section 1.1, Overview seems more complete. Create a separate sentence about the ABWR supporting reference. Is the ESBWR supporting the ABWR or is the ABWR supporting the ESBWR? Can the ABWR and ESBWR support each other (both direction and not just a one way flow of information)? The information contained in this document is furnished **for the purpose of supporting the NRC review of the certification of the ESBWR**, with the information here being used as ABWR supporting reference.		ST	9/10/07	
4	SMP	Table of Contents	Table of Contents is missing from DOORS version.		ST	9/10/07	
5	SMP	Table of Contents	5.4 Methods and Tools is in Bold. It is not in other sections of the Table of Contents. "and Tools" should be removed since 5.5 covers Tools		ST	9/10/07	
6	SMP	Table of Contents	5.5 Tools is in Bold. It is not in other sections of the Table of Contents.		ST	9/10/07	
7	SMP	Table of Contents	5.6 {{ Planning Phase. Remove double brackets. The double brackets appears in other places of the Table of Contents (e.g. 6.4.2, 6.5.1, 8.5.0, Appendix A		ST	9/10/07	
8	SMP	Table of Contents	Section 5 parts on the Software Development Lifecycle appears to be inconsistent in what order you discuss the individual phases. It appears that you are trying to discuss the parts that make up each phase as follows (1) Inputs (2) Outputs (3) Activities (4) Each Deliverable (can be more than one). (5) Baseline Review Record. When you look at each phase, the order varies, what is capitalized varies, which subsection title includes the phase in the title name varies. Not all phases discuss all 5 items.		ST	9/10/07	
9	SMP	Table of Contents	5.11.7 is repeated twice.. Should the operation and training manuals be part of section 5.12? Training is not covered as a separate activity in section 5.		ST	9/10/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
10	SMP	Table of Contents	Material in section 6.1 does not follow the same format in sections 5, 7, 8, and 9. Section 6.1 has no title.		ST	9/10/07	
11	SMP	Table of Contents	Section 6 – There is no discussion of Tools used in the Integration Plan.		ST	9/10/07	
12	SMP	Table of Contents	Section 6.5 does not discuss Problem Reporting as a separate sub section.		ST	9/10/07	
13	SMP	General	The SMP and each plan needs to discuss problem reporting and change control. Tools exist to help manage this.		ST	9/10/07	
14	SMP	General	Meetings and Emails have a tendency to change scope and requirements during the software development lifecycle. How will this be managed? How will the changes be documented, approved, and implemented? What will be done if an approved change or fix goes to a previous phase that has already been completed?		ST	9/10/07	
15	SMP	Table of Contents	7.6.1 should be rolled into 7.6		ST	9/10/07	
16	SMP	Table of Contents	No separate section 7.x for the Operation and Maintenance Manuals		ST	9/10/07	
17	SMP	Table of Contents	There appears to be two 7.9 sections		ST	9/10/07	
18	SMP	Table of Contents	Word has features to automatically create the Table of Contents for you.		ST	9/10/07	
19	SMP	Table of Contents	Section 7, Software Installation Plan does not discuss the use of tools to help in this activity.		ST	9/10/07	
20	SMP	General	Tools exist for all activities involving software. We need to discuss if and how we are going to use them.		ST	9/10/07	
21	SMP	General	Documentation Control, Source Control, and Problem Documentation, Reporting, Resolution, and Implementation needs to be addressed in the SMP and in each plan of the SMP.		ST	9/10/07	
22	SMP	Table of Contents	Spacing for Section 7.10 and above is different from the initial sections (2 spaces instead of 1 between the number and the title).		ST	9/10/07	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
23	SMP	Table of Contents	I don't understand why we have the section 7.11, Software Archive Retrieval. How will version control of software and documents be handled?		ST	9/10/07	
24	SMP	Table of Contents	Section 8.5.0 title is missing. All other parts of the SMP start with x.1 not x.0. This is a typo in the SMP training course handout. I did not see this in the DOORS version.		ST	9/10/07	SMP-1635
25	SMP	Table of Contents	Section 8.5.1 You have Software Operations Maintenance Manuals. Did you mean Software Operation and Maintenance Manuals?		ST	9/10/07	
26	SMP	General	Should the SMP say more about the Retirement Phase of the Software Development Lifecycle?		ST	9/10/07	
27	SMP	Table of Contents	For consistency, should section 9.7 Metrics be Measurement and Metrics.		ST	9/10/07	
28	SMP	Table of Contents	The use of dots in the Table of Contents conflicts with the dots we use to indicate GE proprietary Information		ST	9/10/07	
29	SMP	Appendix B	The definitions for the three Software Classes are not in Alphabetical Order. They come after the P.. and before the R... definitions.		ST	9/10/07	
30	SMP	General	When software is updated with a newer version, is the older version of the software covered by maintenance or is it considered retired software. How and where is it covered in the SMP.		ST	9/10/07	
31	SMP	6	Would Software Integration Test Plan or Software Test Plan be a more appropriate tile? Unit testing should be covered somewhere in the SMP? Does it matter if unit testing is done here at GE or by a vendor? Will the requirements of the SMP apply to vendors as well?		ST	9/10/07	
32	SMP	4.4.2 Tools	Wording for first sentence "The Project manager shall specify approve which tools.."	Should read "The Project manager shall approve which tools...". The PM may not necessarily specify the tools, but does have the responsibility to approve the use of the tools.	JMH	9-18-2007	
33	SMP	Table 5.8-1	Software Safety Analysis is entered twice in the table.	Eliminate entry number 7 in Table 5.8-1	JMH	9-18-2007	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
34	SMP	Table 5.9-1	Table incorrectly lists "Requirements Baseline Review Record".	Table entry should read 'Implementation Baseline Review Record".	JMH	9-18-2007	
35	SMP	Table 5.10-1	Item 1 – "Software Validation Test Report of N Class Software"	Entry should read "Software Validation Test (SVT) Report of N Class Software"	JMH	9-18-2007	
36	SMP	6.1.1 Overview	Software Integration Plan acronym is entered as (SIP).	The correct acronym is (SIntP).	JMH	9-18-2007	
37	SMP	Figure 5-3 and all of section 5.7	Figure 5-3 begins with the HSS, goes to the SyRS and SRS, then onwards. But the requirements section (5.7.4) begins at software tools and COTS which is in the middle of the requirements phase.	Reorder ALL of section 5.7 to be consistent with figure 5-3. Follow the flow diagram.	PWP	9-19-2007	
38	SMP	Figure 5-4 and all of section 5.8	Figure 5-4 covers a lot more than what section 5.8 covers for the design phase of the software life cycle. SAT, MFAT and SFAT plans are missing from the discussion. So are supplemental documentation package for PDS and support S/W tool doc package	Cover each block in figure 5-4 within section 5.8 in the order that the figure flow, not just SVT plans, Intraystem comm. Protocol specs, SDDs and software coding & conventions guidelines.	PWP	9-19-2007	
39	SMP	Figure 5-5 and all of section 5.9	Figure 5-5 has SSA after the SFT Report and SVT Plans, but section 5.9 discusses these right after coding and before discussing the process for code review and SFT. Section 5.9 additionally skips software release for validation testing shown on figure 5-5 to be before the BRR.	Cover each block within figure 5-5 in the order that it is shown, and ensure ALL blocks are covered.	PWP	9-19-2007	
40	SMP	Figure 5-6 and all of section 5.10	The SQA audit after the SVT Report is not discussed. Instead, the section jumps directly to production release & the SBD. The HFE V&V is also not covered in section 5.10	Cover each block within figure 5-6 in the order that it is shown, and ensure ALL blocks are covered	PWP	9-19-2007	
41	SMP	Figure 5-7 and all of section 5.11	The HFE ISV, V&V RSR Results Summary Report are not discussed in section 5.11 even though they are shown on figure 5-7.	Cover each block within figure 5-7 in the order that it is shown, and ensure ALL blocks are covered	PWP	9-19-2007	
42	SMP	Figure 5-8 and all of section 5.11	I agree with not covering SOM and Trng manuals in section 5.11 since they are covered at length later on. But no mention is made in section 5.11 of the SAA, Installation Checkout and HFE Design Implementation Results Summary Report that figure 5-8 shows.	Except for SOM and Trng manuals, cover each block within figure 5-7 in the order that it is shown, and ensure ALL blocks are covered	PWP	9-19-2007	
43	SMP	Table 5.8-1	Table repeats Software Safety Analysis Report twice as items 5 and 7.	Delete item 7; renumber remaining items accordingly.	PWP for Tim Everitt	09-24-2007	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
44	SMP	Section 5.8.3.3	"...section from Section 5.8.3.3, I believe that the Software Validation Test Plan, Procedures, and Test Case Specification are intended to meet the "software requirements" instead of the "system requirements" which requires integration with the hardware system later in FAT phases. The entire software design phase is dedicated to the implementation of the software requirements. Slide 89 reinforces this by requiring traceability to the SRS, HSS, and UIS."	Change 1st sentence in 5.8.3.3 to read: "The Software Validation Test Plan, Procedures, and Test Case Specifications including acceptance criteria, define how the individual test cases will ensure that the completed, integrated software package meets the ~~system~~ software requirements	PWP for Tim Everitt	09-24-2007	
45	SMP	Table 5.9-1	Item 8 is incorrectly identified as Requirements Baseline Review Record instead of Implementation Baseline.....	Change to Implementation Baseline Review Record	PWP for Tim Everitt	09-24-2007	
46	SMP	Section 6.1.1	Grammatical error: This Software Integration Plan (SIntP) consists of three major phases; integrating the various software modules together for form single programs, integrating the result of this the hardware and instrumentation and testing the resulting integrated product.	Change to: This Software Integration Plan (SIntP) consists of three major phases; integrating the various software modules together for form single programs, integrating the result of this **with** the hardware and instrumentation and testing the resulting integrated product	PWP for Tim Everitt	09-24-2007	
47	SMP	6.1.2	Error is 6.1.2: "The purpose of this SMP is to:" should read "The purpose of this SintP is to:"	Change to "The purpose of this SintP is to:"	PWP for Tim Everitt	09-24-2007	
48	SMP	6.2.2	The DOORS version does not have "Software Functional Test Engineer" marked as an object header. DOORS item SMP-1257. Reason: Difference between printed copy in SMP class and DOORS.	Change line to an object header line. It should read "6.2 Software Functional Test Engineer (RTE)." The object header number for Test Personnel Qualifications should be 6.2.3	ST	10/2/07	SMP-1257
49	SMP	Appendix C	The definition of the word interface needs to include all four variations as defined in IEEE 610 and as requested by RG 1.172 and MPR review. The definition should be modified to include the additional NRC interpretation found in Reg Guide 1.172.	See requirement in translation matrix.	ST	10/24	RTD-115

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
50	SMP	5.7.8	More needs to be said about safety requirements than the one sentence in the last paragraph of section 5.7.8.	Follow the links from the translation matrix to the SQAP for more information. Consideration should be given to writing an implementation procedure that expands on what needs to be in a software requirement specification document.	ST	10/26	RTD-169
51	SMP	Appendix A	Since we classify requirements as safety or non-safety, we meet the requirement that "requirements be ranked by importance". IEEE comments on stability and necessity are suggestions and not requirements.	Remove exception noted in Appendix A of the SMP for IEEE 830-1993	ST	10/26	RTD-129 RTD-169 RTD-171
52	SMP	2.2.1	You have two standards listed. They are both the same document.	The two reference statements need to be combined into one reference.	ST	10/28	SMP-48 SMP-49
53	SMP	5.7.8	Nowhere in the document is the requirement to verify the SRS for modifiability and style.	Add to section 5.7.8 a paragraph that cover all characteristics.	ST	10/28	SMP-686 RTD-4041 RTD-4042 RTD-133 RTD-173 thru RTD-176
54	SMP	5.7.8	A glossary of definitions either inside the SRS or as a separate stand alone document is needed.	A list of precise definitions of technical terms is needed. Include terms that may have multiple meanings so it is clear which definition is being used.	ST	10/28	RTD-4041 RTD-133 RTD-159 RTD-162 RTD-168 RTD-4038 RTD-4042 RTD-4147
55	SMP	5.7.8	The NRC input (RG 1.172) as to what information is needed for incomplete requirements (TBD's) is not enough.	Use information from the IEEE to expand the discussion of incomplete requirements.	ST	10/29	RTD-165 RTD-166
56	SMP	5.8.2	Software Safety Analysis Report is mentioned twice in the design output table.	Remove one of the entries	ST	11/1	SMP-778
57	SMP	5.7.8	We need an implementing procedure for the software requirement specification document.	Use the implementing procedure to cover the "should" requirements found in the translation matrix. The requirements cover BTP 7-14, RG 1.172, and IEEE 830. Columns where the reviewer initials are ST2 and ST3 will go into this document.	ST	11/1	RTD-109

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
58	SMP	5.7.7 5.7.8	When requirements discuss functionality of the software, it is not made clear that each mode of operation must be covered	Add statement "for each mode of operation" to the SMP. See RTD entries for links.	ST	11/1	RTD-161 RTD-4023 RTD-4034
59	SMP	Various	SMP and SQAP talk about cyber security but they do not classify the security threats according to impact on safety and likelihood of occurrence.	Add the requirement that identified security threats need to be classified according to their impact on safety and likelihood of occurrence. Use DOORS links to find needed sections.	ST	11/1	RTD-141 RTD-4029
60	SMP	General	The abbreviations "SMP" and "SCMP" are used interchangeably throughout NEDE-33226 & NEDE-33245 to refer to NEDE-33226. All uses of "SCMP" to refer to NEDE-33226 should be changed to "SMP".		JMH	11/1	
61	SMP	5.7.8	The section on SRS does not talk about the fact that the System Requirement Specification is one of the documents that drive the SRS document.	Whenever HSS is mentioned, mention the SyRS. The list of documents that feed into the SRS should also include the Output documents from the planning phase.	ST	11/2	RTD-160
62	SMP	5.9.3.4	**Training feedback**: code reviews should specify Class Q is required IVVT review		Greg Droba	11/26	
63	SMP	General	**Training feedback**: SMP validation makes sure we are building the thing to the requirements specified, but there are no words or such to consider if we are building the right thing. This is an important part of validation.		Greg Droba	11/26	
64	SMP	General	**Training feedback**: SBD in Test Phase should be Release Description. Not the same as SBD in Implementation Phase.		Ty Rogers	11/26	
65	SMP	General	**Training feedback**: Evaluate COTS in implementation phase, NOT requirements phase		Ty Rogers	11/26	
66	SMP	General	**Training feedback**: Update implementation phase to show loopback from code review & SFT to Coding. Code review and SFT should not be parallel activities, but series with Code Review 1st.		Ty Rogers	11/26	
67	SMP	5.9.3.4	**Training feedback**: Should allow use of automated tools for code review – also in SintP		Ty Rogers	11/26	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
68	SMP	5.9.3.5	**Training feedback**: Should allow use of automated tools for unit test & integration test (i.e., LDRA) – also in SintP		Ty Rogers	11/26	
69	SMP	General	**Training feedback**: Deferred verification per EOP only applies to docs issued by RMCN. [Can't do SQA deferred design verifications.]		Ty Rogers	11/26	
70	SMP	General	**Training feedback**: Suggest to change "target environment" to "installed environment" or "deployment environment" or other to describe site installation. [Target environment has a special meaning in software development that differs from the way in which it's used in the SMP.]		Ty Rogers	11/26	
71	SMP	5.7.8 section 4.d	This comment on minimizing the use of assembly language needs to be removed. Whatever programming language that is appropriate to the application should be used regardless of people's personal attitude. IEEE 830 clearly states that design decisions be left out of the requirement specifications.	Remove all of part 4.d	ST	11/3	
72	SMP	5.7.8	BTP 7-14 states that Correctness **requires** that no other requirements be stated. This is not mentioned in the SMP.	Add a statement to the SMP that the SRS not contain requirements that belong in other documents.	ST	11/3	RTD-4039
73	SMP	5.7.8	The IEEE states that a SRS is correct if, and only if, every requirement stated therein is one that the software shall meet. This really isn't mentioned in the SMP or SQAP.	Add a statement to the SMP that every requirement in the SRS is one that can be met and shall be met.	ST	11/3	RTD-157
74	SMP	Appendix A	For RG 1.170 and IEEE 829, add the following exception. Two entries in the table needs to be updated.	The sequence order of sections for each document found in IEEE 829 will not be followed. The justification for this is: Modern Tools and Techniques do not always allow themselves to follow the outline found in IEEE 829. When that is the case, the required information will be captured and displayed in a readable and understandable manor that is best for the tool/technique and the reader/users.	ST	11/5	

#	Affected Doc	Section	Comment	Recommended Resolution	Identifier	Date	DOORs ID#
75	SMP	Various	When the test documentation layout is discussed, add the following statement to that paragraph. See the RTD ID# for list of locations	RG 1.170 and IEEE 829 shall be followed ... as amended by the exception in Appendix A ... Modern Tools and Techniques do not always allow themselves to follow the outline found in IEEE 829. When that is the case, the required information will be captured and displayed in a readable and understandable manor that is best for the tool/technique and the reader/users.	ST	11/5	SMP-1267 RTD-618 RTD-625 RTD-634 RTD-640 RTD-647 RTD-652 RTD-658 RTD-668
76	SMP	Various	We need an implementing procedure for test documentation.	Write an implementing procedure to cover the parts of RG 1.170 and IEEE 829 not covered in the SMP and SQAP. Update SMP and SQAP to reference the implementing procedure.	ST	11/5	
77	SMP	6.5 thru 6.5.1.3	These sections will have to be modified to account for the fact that we will write an implementing procedure for IEEE 829 and RG 1.170.		ST	11/7	
78	SMP	Section 5.0	GE needs to state that the project will use a Waterfall type Software Development Model for all of the ESBWR software development processes.		RJS	11/16	

Doors Audit - List of GEH Attendees and Titles

Lloyd Heckle	SQA Manager
Richard Stattel	SPE Lead Engineer
Rajeev Kohli	Sr. Engineer I&C
Mike Herron	SPE Sr. Engineer
Paul Primavera	SPE Training Engineer (Granite)
Melissa Crownover	SPE Software Engineer (Granite)
Wayne Glidden	SPE Software Engineer (Granite) New Hire
Sam Thompson	SPE Software Engineer (Granite) On phone from Wilmington
Tim Everitt	Software Quality Control Manager Salem Va.
Don Lewis	Regulatory Affairs Engineer

Tuesday 11/13/07

NRC Software Audit Meeting Attendance (~~Wednesday 11/14/07~~)

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Wednesday 11/14/07

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Enclosure 5

MFN 07-627

Affidavit

GE Hitachi Nuclear Energy

AFFIDAVIT

I, David H. Hinds, state as follows:

(1) I am General Manager, New Units Engineering, GE Hitachi Nuclear Energy ("GEH"), have been delegated the function of reviewing the information described in paragraph (2) which is sought to be withheld, and have been authorized to apply for its withholding.

(2) The information sought to be withheld is contained in Enclosure 1 of GEH letter MFN 07-627, Mr. James C. Kinsey to U.S. Nuclear Regulatory Commission, entitled *Submittal of DOORS Software Audit Presentation Slides for Support of ESBWR Design Certification Application – Human Factors Engineering*, dated January 21, 2007. The proprietary information in Enclosure 1, *Presentation Materials Used During NRC Audit of DOORS (Proprietary)*, is delineated by a [[underline inside double square brackets$^{\{3\}}$]]. Figures and large equation objects are identified with double square brackets before and after the object. In each case, the superscript notation {3} refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.

(3) In making this application for withholding of proprietary information of which it is the owner, GEH relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.790(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975F2d871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704F2d1280 (DC Cir. 1983).

(4) Some examples of categories of information which fit into the definition of proprietary information are:

a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GEH's competitors without license from GEH constitutes a competitive economic advantage over other companies;
b. Information which, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
c. Information which reveals aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;

d. Information which discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a, and (4)b, above.

(5) To address 10 CFR 2.390 (b) (4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GEH, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.

(6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge. Access to such documents within GEH is limited on a "need to know" basis.

(7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist or other equivalent authority, by the manager of the cognizant marketing function (or his delegate), and by the Legal Operation, for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.

(8) The information identified in paragraph (2), above, is classified as proprietary because it identifies detailed GEH ESBWR methods, techniques, information, procedures and assumptions related to its Human Factors Engineering technology. Development of these methods, techniques, information, procedures and assumptions and their application for the design, modification, and analyses methodologies and processes for Human Factors Engineering and Software Management was achieved at a significant cost to GEH and would result in a significant economic and competitive advantage to a competitor.

The development of the evaluation process along with the interpretation and application of the analytical results is derived from the extensive experience database that constitutes a major GEH asset.

(9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GEH's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GEH would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing these very valuable analytical tools.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 21st day of January 2008.

David H. Hinds
GE Hitachi Nuclear Energy