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Your ref: Project Number 740
Our ref: DCP/NRC1981

August 23, 2007

Subject: AP1000 COL Response to Requests for Additional Information (TR 102)

In support of Combined License application pre-application activities, Westinghouse is submitting responses to the NRC requests for additional information (RAIs) on AP1000 Standard Combined License Technical Report 102, APP-GW-GLR-102, AP1000 PRA Update Report. These RAI responses are submitted as part of the NuStart Bellefonte COL Project (NRC Project Number 740). The information included in the responses is generic and is expected to apply to all COL applications referencing the AP1000 Design Certification.

Responses are provided for RAI-TR102-SPLA-01 through RAI-TR102-SPLA-08. These responses complete all requests received to date for Technical Report 102.

Pursuant to 10 CFR 50.30(b), the responses to the requests for additional information on Technical Report 102 are submitted as Enclosure 1 under the attached Oath of Affirmation.

Questions or requests for additional information related to the content and preparation of these responses should be directed to Westinghouse. Please send copies of such questions or requests to the prospective applicants for combined licenses referencing the AP1000 Design Certification. A representative for each applicant is included on the cc: list of this letter.

Very truly yours,

Monte D Bartley FOR

A. Sterdis, Manager
Licensing and Customer Interface
Regulatory Affairs and Standardization

D079

NRO

/Attachment

1. "Oath of Affirmation," dated August 23, 2007

/Enclosure

1. Responses to Requests for Additional Information on Technical Report No. 102

cc:	D. Jaffe	-	U.S. NRC	1E	1A
	E. McKenna	-	U.S. NRC	1E	1A
	S. Adams	-	Westinghouse	1E	1A
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	M. Moran	-	Florida Power & Light	1E	1A
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	E. Schmiech	-	Westinghouse	1E	1A
	G. Zinke	-	NuStart/Entergy	1E	1A
	D. McLaughlin	-	Westinghouse	1E	1A

ATTACHMENT 1

"Oath of Affirmation"

ATTACHMENT 1

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

In the Matter of:	)
NuStart Bellefonte COL Project	)
NRC Project Number 740	)

APPLICATION FOR REVIEW OF
"AP1000 GENERAL COMBINED LICENSE INFORMATION"
FOR COL APPLICATION PRE-APPLICATION REVIEW

W. E. Cummins, being duly sworn, states that he is Vice President, Regulatory Affairs & Standardization, for Westinghouse Electric Company; that he is authorized on the part of said company to sign and file with the Nuclear Regulatory Commission this document; that all statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.

W. E. Cummins
Vice President
Regulatory Affairs & Standardization

Subscribed and sworn to
before me this 23rd day
of August 2007.

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Patricia S. Aston, Notary Public
Murrysville Boro, Westmoreland County
My Commission Expires July 11, 2011
Member, Pennsylvania Association of Notaries

Notary Public

ENCLOSURE 1

Responses to Requests for Additional Information on Technical Report No. 102

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-01
Revision: 0

Question:

APP-GW-GLR-102, "AP1000 Probabilistic Risk Assessment Update Report" (TR 102 hereafter), states that the updated PRA is now available for onsite review at Westinghouse offices in Monroeville, Pennsylvania. We request that a copy of the model (and associated software) be made available at Westinghouse offices in Rockville, MD, either on a local workstation or by remote access.

We understand that when technical reports that address COL information/action items are accepted by the staff, the DCD will be revised to reflect the changes so that they can be referenced accurately in the COL application. Please confirm that all changes and additions to the design described in TR 102 are reflected in the most recent PRA reports that have been provided. If not, please provide the schedule for updating the design certification PRA and delivering an updated electronic version.

Westinghouse Response:

Westinghouse requests that the review of the electronic AP1000 PRA model files be performed at Westinghouse's offices in Monroeville, Pennsylvania. Westinghouse believes that it is necessary for engineers knowledgeable in the AP1000 PRA methods and models be present during the staff review to provide guidance and oversight during the review. Westinghouse believes this is an acceptable compromise given that there is no regulatory requirement to submit the AP1000 PRA for NRC staff review. However, if the staff is unable to visit Westinghouse's offices in Monroeville, the staff may submit to Westinghouse a limited number of PRA cases, to be discussed with Westinghouse in advance, that Westinghouse will analyze on behalf of the staff. Westinghouse would perform the analyses and document the results in a Technical Report to be submitted to the staff for review.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-02
Revision: 0

Question:

According to the DCD (Chapter 19 Appendix C), the PRHR system is to be credited when accumulators fail. This is not yet incorporated in the PRA. Please describe success criteria for this system and the basis for considering the PRHR to be available.

Westinghouse Response:

The issue described in DCD Chapter 19, Appendix C is further clarified here. In the AP1000 design, medium LOCAs (including Core Makeup Tank (CMT) Line Break and Safety Injection Line Break) are not large enough to sufficiently depressurize the Reactor Coolant System (RCS) to Accumulator injection pressure, assuming that the CMTs have failed to inject initially. Furthermore, Automatic Depressurization System (ADS) actuates on CMT injection; thus, automatic ADS has failed as well. Thus, the Accumulators fail to inject because RCS pressure is too high, not because of mechanical equipment failure.

At this point in the above sequence, the plant is experiencing a medium LOCA with no RCS makeup. The accident progresses at a rate that manual ADS actuation cannot be completed in the time available. Therefore, PRHR may be actuated to depressurize the RCS. This action provides additional time before an unfavorable condition and the operators may manually actuate ADS.

The PRHR may be actuated at high RCS pressures. For successful operation of the PRHR, one or both of the air-operated valves on the passive residual heat removal heat exchanger outlet to cold leg line are required to open to begin circulation through the PRHR heat exchanger.

Preliminary quantification shows that the plant CDF is not significantly affected by the above sequence. The large release frequency (LRF) is not expected to be significantly affected either. The change in risk is expected to be less than 0.1% of the total internal events core damage frequency.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-03
Revision: 0

Question:

The treatment of loss of indication suggests that unless the loss is total, the operator is assumed to correctly diagnose the plant condition. Please discuss the treatment of non-recovery probability under conditions where the operator is confronted with conflicting cues.

Westinghouse Response:

The human reliability analysis (HRA) for the AP1000 is based on the technique for human error rate prediction (THERP) methodology described in NUREG/CR-1278 (Reference 1). Human reliability analysis is used to quantify the human errors that are modeled in the event trees or fault trees. The human reliability analysis is performed according to the AP1000 Human Reliability Analysis Guidelines provided in AP1000 PRA Chapter 30A (Reference 2).

THERP defines diagnosis as having three components, namely detection + diagnosis + decision. The THERP definition is believed to be applicable to knowledge-based responses, whereby the operators go through more thought-process (deciphering) in order to diagnose an event. The generic procedures (Emergency Response Guidelines) are based on the philosophy of symptomatic responses to an emergency operating situation and, therefore, reduce the diagnosis of an event to responding to cues such as alarms, annunciators, and indicators (detection); thus limiting the cognitive aspects (diagnosis + decision). Therefore, it is advisable not to use Table 20-3 of the THERP Handbook or similar models for actions governed by symptom-based procedures in which the operators are trained; such activities are termed rule-based actions.

Although the use of symptom-based procedures may not eliminate all knowledge-based behaviors by the operators, the scope of the AP1000 human reliability analysis covers only the modeling of rule-based activities. Therefore, no credit is taken for knowledge-based recovery efforts.

The AP1000 PRA was revised and documented in TR-102. One of the more important PRA revisions involved developing new models for the new Instrumentation and Controls (I&C) designs. However, it is important to recognize that the model revisions focused on the I&C system architecture. The assumptions in the AP1000 PRA regarding control room design and available indication were not modified.

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

The AP1000 HRA is sensitive to the indications available to the operator in the control room. Visual and audible alarms serve as prompts for initial operator response. AP1000 HRA modeling considers the number of indications available to the operator and assigns a probability of the operator failing to correctly respond to those indications. The AP1000 HRA is not dependent on the AP1000 I&C architecture. As the assumptions regarding the available control room indication were not modified during this revision of the AP1000 PRA, there was no need to revise the AP1000 HRA or the HRA dependency models.

References:

1. Swain, A. D. and Guttman H. E., *Handbook of Human Reliability Analysis with Emphasis on Nuclear Power Plants*, NUREG/CR-1278, August 1983.
2. AP1000 Report APP-GW-GL-022, "AP1000 Probabilistic Risk Assessment".

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-04
Revision: 0

Question:

On page 15 of TR 102, RAW is identified as decreasing with increased PMS reliability. If PMS reliability improvement were the only change, this result would not be expected, as RAW is defined as the ratio of CDF with failure assumed to the baseline CDF. Increased PMS reliability would enlarge the difference between the baseline CDF and the CDF given PMS failure. Please identify the factors that contribute to the result described.

Westinghouse Response:

There were several PRA model changes made in addition to the I&C revision, as documented in TR 102. While these model changes may have had some impact on the relative risk ranking, they are not expected to result in significant changes.

In this instance, the risk achievement worth (RAW) value for the Protection and Safety Monitoring System (PMS) is influenced more by the process used to calculate the RAW value. In the AP1000 PRA, the calculation is performed by identifying the basic events contributing to PMS system failure and equating those basic event frequencies to 1.0 (guaranteed failure); thus, resulting in guaranteed failure of the system. Quantification of the AP1000 internal events PRA model, with the above described conditions, yields the CDF with PMS system failure assumed (CDF(1)). As acknowledged by the staff, the ratio of CDF with failure assumed to the baseline CDF (CDF(B)) provides the RAW value, as indicated by the following equation:

$$RAW = CDF(1) / CDF(B)$$

Previous revisions of the AP1000 PRA (Reference 1) used a conservative approach when selecting PMS basic events. Specifically, in addition to the PMS-specific basic events, the analysis also assigned the common cause sensor failure basic event probability to 1.0. This approach is conservative because this common cause sensor failure also contributes to failure of the Diverse Actuation System (DAS). DAS sensors are diverse from the PMS sensors. Therefore, the PMS RAW value reported in previous revisions of the AP1000 PRA also assumes a degraded DAS.

The approach used for the TR 102 revision is a more realistic analysis without failure of the DAS. The basic events selected to represent the PMS system are adequate to result in PMS failure. As a result, the CDF(1) value has decreased, resulting in an overall decrease in PMS RAW.

Despite the change in approach, it is important to note that the insights and conclusions resulting from the AP1000 PRA Importance analyses remain consistent between revisions.

Specifically, in previous revisions of the AP1000 PRA the PMS was show to be the most important PRA system per RAW criteria. This insight is still valid. In this instance the change in RAW value may not be as important as the relative ranking of the PMS compared to that of other PRA systems.

Reference:

1. AP1000 Report APP-GW-GL-022, "AP1000 Probabilistic Risk Assessment".

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-05
Revision: 0

Question:

The PMS scope has been changed:

DCD	TR 102
Integrated protection cabinets (IPC) Protection logic cabinets (PLC) Engineered safety features actuation cabinets (ESFAC)	Integrated Logic Processors/Cabinets (ILP/ILC) Local Coincidence Logic Cabinets (LCL) Bistable Logic Processors (BLP)
Protection logic bus	AF100 bus
Qualified data processing system (QDPS)	No change
Reactor trip switchgear (RTS)	No change
Operator controls	No change
Main control room multiplexers and remote shutdown workstation multiplexers	

Table 1—Changes in PMS Scope

Please describe the importance measures for the PMS and its SSCs.

Westinghouse Response:

The AP1000 Probabilistic Risk Assessment (PRA) Protection and Safety Monitoring System (PMS) model was revised and documented in TR-102 to consider the CommonQ design. A high level description of a signal flowpath through the CommonQ hardware is provided in TR-89 (Reference 1).

The AP1000 PRA models hardware and software failures. The software failures are common cause failures (CCF) across multiple boards. The software CCF models are consistent between the current and previous revisions of the AP1000 PRA. As indicated by Table RAI-TR102-SPLA-05.1 and Table RAI-TR102-SPLA-05.2, common cause software failures are the most important failure modes in the PMS. Note that there are two common cause software failures modeled in the AP1000 PMS PRA model. The first is identified by the basic event CCX-SFTW-PMS/PLS, and represents common cause software failure across all boards of the PMS and Plant Control System (PLS). The Diverse Actuation System (DAS) is completely diverse from the PMS and PLS and as a result there are no shared CCFs between the DAS and the PMS and PLS. The second common cause software failure is identified by the basic event CCX-SFTW-PMS, and represents common cause software failure among all boards in the PMS.

Due to the redundancy in the PMS, the important failure modes in the PMS are all CCFs, as illustrated in Table RAI-TR102-SPLA-05.1 and Table RAI-TR102-SPLA-05.2. These important failure modes include CCF of sensors, CCF of Component Interface Modules (CIM) and CCF of Termination Units (TU), which are located on the output side of the Integrated Logic Processors (ILP). Additional failure modes include CCF of Contact Input (CI) modules, CCF of Digital Output Modules (DOM), CCF of Digital Input Modules (DIM), and CCF of Processor Modules (PM), which are all located on the Bistable Processor Logic (BPL) cards, Local Coincidence Logic (LCL) cards, and ILPs.

The individual AF100 bus failures are not important to risk due to the redundancy of the PMS. The AF100 bus is a communication bus between the BPL, LCL and ILPs. However, CCF of the AF100 buses is important as this CCF may result in failure of the above cards to communicate.

Additionally, from DCD Rev. 16, Chapter 7 (Reference 2) "the protection and safety monitoring system does not use multiplexers to provide a signal path between the protection system equipment and the main control room". As such, the PMS multiplexers are no longer modeled in the AP1000 PRA.

Table RAI-TR102-SPLA-05.1: PMS Risk Achievement Worth Values with Respect to Internal Events Core Damage Frequency			
Number	**Event Name**	**Risk Achievement Worth**	**Description**
1	CCX-SFTW-PMS/PLS	8.40E+03	COMMON CAUSE SOFTWARE FAILURES BETWEEN PMS AND PLS
2	CCX-SFTW-PMS	1.31E+03	COMMON CAUSE SOFTWARE FAILURES OF PMS
3	CCX_SENS	1.14E+03	COMMON CAUSE FAILURE OF INSTRUMENTATION SENSORS
4	CCX_PMS_CIM	1.02E+03	COMMON CAUSE FAILURE OF CIMs
5	CCX_PMS_CI	4.31E+02	COMMON CAUSE FAILURE OF (CONTACT INPUT) MODULES
6	CCX_PMS_DOM	4.28E+02	COMMON CAUSE FAILURE OF DIGITAL OUTPUT MODULES
7	CCX_PMS_PM	4.28E+02	COMMON CAUSE FAILURE OF PROCESSOR MODULES
8	AF100_HWY_FAILS	4.22E+02	AF100 BUS FAILURE
9	CCX_PMS_TU	4.22E+02	COMMON CAUSE FAILURE OF TUs
10	CCX_PMS_DIM	2.80E+02	COMMON CAUSE FAILURE OF DIGITAL INPUT MODULES

Table RAI-TR102-SPLA-05.2: PMS Risk Reduction Worth Values with Respect to Internal Events Core Damage Frequency			
Number	**Event Name**	**Risk Reduction Worth**	**Description**
1	CCX-SFTW-PMS	1.02E+00	COMMON CAUSE SOFTWARE FAILURES OF PMS
2	CCX-SFTW-PMS/PLS	1.01E+00	COMMON CAUSE SOFTWARE FAILURES BETWEEN PMS AND PLS
3	RNC_ILC3_DIV-B	1.01E+00	REMOTE NODE CONTROLLER FAILURE
4	CCX_PMS_DIM	1.01E+00	COMMON CAUSE FAILURE OF DIGITAL INPUT MODULES
5	CCX_PMS_CI	1.00E+00	COMMON CAUSE FAILURE OF (CONTACT INPUT) MODULES
6	RNC_ILC3_DIV-A	1.00E+00	REMOTE NODE CONTROLLER FAILURE
7	CCX_SENS	1.00E+00	COMMON CAUSE FAILURE OF INSTRUMENTATION SENSORS
8	CCX_PMS_DOM	1.00E+00	COMMON CAUSE FAILURE OF DIGITAL OUTPUT MODULES
9	CCX_PMS_PM	1.00E+00	COMMON CAUSE FAILURE OF PROCESSOR MODULES
10	RNC_ILC3_DIV-D	1.00E+00	REMOTE NODE CONTROLLER FAILURE

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

References:

1. AP1000 Document APP-GW-GLR-071, "AP1000 Protection and Safety Monitoring System Architecture Technical Report", Carl A. Vitalbo, December 2006.
2. AP1000 Documents APP-GW-GL-700, "AP1000 Design Control Document", Revision 16, May 2007.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-06
Revision: 0

Question:

The PLS scope has been changed:

DCD	TR 102
Control cabinets	No change
Logic cabinets Signal selector cabinets	Input/Output (I/O) Modules Data highway
Sensors	No change
Operator controls	No change

Table 1—Changes in PLS Scope

Please identify the location of the I/O modules in the Ovation design. Please describe the importance measures for the PLS and its SSCs.

Westinghouse Response:

Ovation Input/Output (I/O) modules are located in the Control Cabinets along with the Ovation Controllers. There are several instances where it is necessary to locate an I/O module in other locations in the AP1000 plant. In these instances, the I/O module is located in a Remote I/O Cabinet. Logic Cabinets and Signal Selector Cabinets do not exist in the Ovation Digital Control System (DCS) design.

The AP1000 Probabilistic Risk Assessment (PRA) Plant Control System (PLS) model was revised and documented in TR-102 to consider the Ovation DCS design.

The AP1000 PRA models hardware and software failures. The software failures are common cause failures (CCF) of multiple boards. The software CCF models are consistent between the current and previous revisions of the AP1000 PRA. As indicated by Table RAI-TR102-SPLA-06.1 and Table RAI-TR102-SPLA-06.2, common cause software failures are the most important failure modes in the PLS. Note that there are two common cause software failures modeled in the AP1000 PLS PRA model. The first is identified by the basic event CCX-SFTW-PMS/PLS, and represents common cause software failure across all boards of the Protection and Safety Monitoring System (PMS) and PLS. The Diverse Actuation System (DAS) is completely diverse from the PMS and PLS and as a result there are no shared CCFs between the DAS and the PMS and PLS. The second common cause software failure is identified by the basic event CCX-SFTW-PLS, and represents common cause software failure among all boards in the PLS.

The PLS has many redundant controllers and I/O modules to perform the designed control functions. However, for a given control signal there is a limited signal "flow" path from the sensor through the PLS and to the actuating device. While CCF events are important to risk in the PLS design, individual component failures may appear to be relatively important if any given signal is important in the PRA. However, it is necessary to note that none of the individual component failures are regarded as important to plant risk (i.e. RAW > 2.0, RRW > 1.05)

The Real Time Data Highway (Ovation Data Highway) provides a communication path between the Ovation Control Cabinets. Failure of the Ovation Data Highway leads to failure of the Control Cabinets to communicate; thus, failure of the Ovation system. The Ovation Data Highway is the number two important component per RAW results.

Table RAI-TR102-SPLA-06.1: PLS Risk Achievement Worth Values with Respect to Internal Events Core Damage Frequency			
Number	**Event Name**	**Risk Achievement Worth**	**Description**
1	CCX-SFTW-PMS/PLS	8.40E+03	COMMON CAUSE SOFTWARE FAILURES BETWEEN PMS AND PLS
2	OVATION_HWY_FAILS	1.01E+01	OVATION DATA HIGHWAY FAILS
3	CCX_PLS_DOM	7.74E+00	Common Cause Failure of Digital Output Modules (DOM)
4	CCX-SFTW-PLS	7.46E+00	SOFTWARE CCF of PLS
5	CCX_PLS_AIM	2.17E+00	Common Mode Failure of Analog Input Modules (AIM)
6	CVS_3_DOM	1.90E+00	Ovation Digital Output Module (DOM) Fails
7	RNS_V055_DOM	1.83E+00	Ovation Digital Output Module (DOM) Fails
8	CAS_AB_PT_011	1.82E+00	Pressure Transmitter Fails by Random
9	CCX_PLS_AOM	1.73E+00	Common Mode Failure of Analog Output Modules (AOM)
10	CAS_AB_PT_AIM	1.72E+00	Instrument Air Pressure Transmitter Ovation Analog Input Module (AIM) Fails

Table RAI-TR102-SPLA-06.2: PLS Risk Achievement Worth Values with Respect to Internal Events Core Damage Frequency			
Number	**Event Name**	**Risk Reduction Worth**	**Description**
1	CCX-SFTW-PMS/PLS	1.01E+00	COMMON CAUSE SOFTWARE FAILURES BETWEEN PMS AND PLS
2	CAS_AB_PT_011	1.00E+00	Pressure Transmitter Fails by Random
3	CVS_3_DOM	1.00E+00	Ovation Digital Output Module (DOM) Fails
4	RNS_V055_DOM	1.00E+00	Ovation Digital Output Module (DOM) Fails
5	CCX_PLS_DOM	1.00E+00	Common Cause Failure of Digital Output Modules (DOM)
6	OVATION_HWY_FAILS	1.00E+00	OVATION DATA HIGHWAY FAILS
7	CCX-SFTW-PLS	1.00E+00	SOFTWARE CCF of PLS
8	CCX_PLS_AIM	1.00E+00	Common Mode Failure of Analog Input Modules (AIM)
9	CCX_PLS_AOM	1.00E+00	Common Mode Failure of Analog Output Modules (AOM)
10	CAS_AB_PT_AIM	1.00E+00	Instrument Air Pressure Transmitter Ovation Analog Input Module (AIM) Fails

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Response to Request For Additional Information (RAI)

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

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Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-07
Revision: 0

Question:

In addition to TR102, many other technical reports have been or will be submitted. These describe, for example, mechanical system and component design updates, alternate steam and power conversion design, and electrical system design changes. Please describe the process by which proposed design changes and refinements are reviewed for potential impact on risk and the need for changes to the PRA model, including discussion of the following:

- the method(s) used to determine the significance of changes from a risk perspective
- how changes to the design are reflected in ETs, FTs, and system success criteria
- the point in the process at which changes in risk importance are quantified
- how and when the reference model is updated

Westinghouse Response:

All AP1000 design changes are reviewed using a Design Change Proposal (DCP) procedure. The DCPs are evaluated several times during their creation and review for their potential impact on the AP1000 PRA. These evaluations include:

1. In completing the DCP, the originator completes a form which includes a question as to whether the proposed change might change any PRA design inputs in their design area.
2. In another part of the DCP form the originator also completes a form that specifically asks if the proposed change will require modifications to the input data for the PRA.
3. During the review of the proposed change each impactee answers a question on the impact form addressing whether the proposed change will impact any of their inputs to the PRA
4. One of the impactee's is officially assigned the responsibility of assessing whether the proposed change impacts the PRA. This person is the lead design interface between the design organization and the PRA organization. If the proposed change might have an effect on the PRA (failure data, system configuration, failure modes, success criteria, etc.) then the PRA organization is consulted.
5. The PRA impact can also be discussed during the change control board meeting that is held for every proposed change that impacts the DCD or PRA.

For DCPs where there is an impact on the PRA, or a potential impact on the PRA, the Westinghouse Risk Applications and Methods (RAM) group is consulted. The RAM group provides technical consultation in the form of expert opinion, sensitivity analysis, or PRA model update, if necessary.

The PRA model is updated when the determination is made that the DCD Chapter 19 results and insights may be affected significantly.

The only change to the plant design that is reflected in the updated AP1000 PRA (TR102) was the change to the I&C system designs. All of the other design changes were evaluated to either have a no impact, a small beneficial impact or an insignificant negative impact.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None

AP1000 TECHNICAL REPORT REVIEW

Response to Request For Additional Information (RAI)

RAI Response Number: RAI-TR102-SPLA-08
Revision: 0

Question:

Please identify which technical reports (other than TR102) address changes or clarifications with the potential to affect the PRA model. Include, if possible, a "cross-walk" or list of changes in each TR to the PRA model, identifying which ETs, FTs, basic events, and success criteria are affected by each TR, in what way, and whether this is reflected in Rev. 8 of the PRA. (See TR102-SPLA-1)

Westinghouse Response:

Refer to RAI response to RAI-TR102-SPLA-07 for a discussion of the Westinghouse design change control process and how the potential impacts to the PRA are addressed.

Any technical report that details a DCP inherently contains an evaluation of PRA impact, as described by the process discussed in response to RAI-TR102-SPLA-07.

Westinghouse is in the process of developing a technical report (APP-PRA-GER-001, Revision 0) that summarizes all DCD Revision 16 DCPs and their impact on the AP1000 PRA. This technical report is scheduled to be submitted to the NRC on September 21, 2007.

Design Control Document (DCD) Revision:
None

PRA Revision:
None

Technical Report (TR) Revision:
None