BWROG
RIP50 OPTION 2

BWROG/NRC Meeting
Rockville, MD

April 18, 2001

Eric Jebsen (Exelon)

Meeting Purpose/Agenda

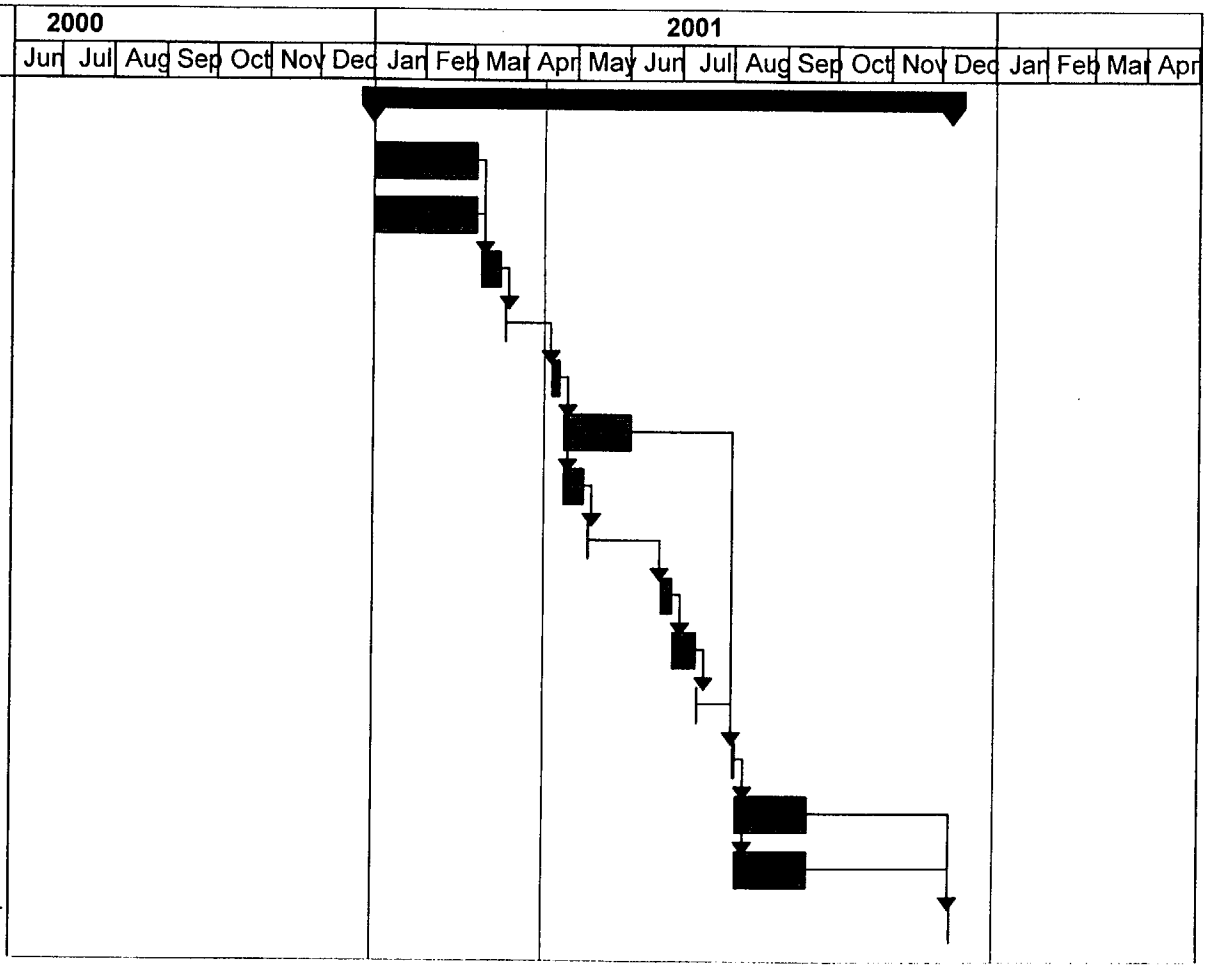
- Present the BWROG Option 2 pilot program and schedule
  - Eric Jebsen (Exelon)
- Explain the BWROG categorization approach and preliminary results
  - Ed Burns (ERIN)
- Discuss special treatment regulations
  - Don Knecht (GE)
- Summarize NRC letter observations
  - Eric Jebsen
- Receive feedback
  - All

Program Phases

- ✓ Phase 1: Cost benefit evaluation
- ◆ Phase 2a: Lead plant evaluation
  Lead plant submittal
- ◆ Phase 2b: Other plant evaluations

Program Schedule

ID	Task Name
1	**2001 Option 2 Program**
2	Classification analysis
3	Special treatment evaluation
4	Report revision
5	Transmit report revision
6	Committee/NRC meeting
7	Draft suggested exemption
8	Report revision
9	Transmit report revision
10	IDP
11	Assess IDP comments
12	Transmit recommendations
13	Committee meeting
14	Revise report
15	Revise draft exmption
16	Quad Cities submits exemptior



Option 2 Categorization Process

Ed Burns (ERIN)

Topics

- Purpose
- Overview
- Definitions of RISC Categories
- Pilot Systems
- Process
- PRA Attributes / Quality
- Results

Purpose

- Discuss BWROG Option 2 Pilot Program Categorization
- Apply NEI Guidelines for Risk Informing Regulations, Option 2, to Quad Cities (BWR/3 Mark I)
  - Examine the categorization process
  - Examine the PRA interface
  - Provide results of pilot study
- Demonstrate if Option 2 for Risk Informing Regulations is feasible

Overview Option 2 Categorization Process

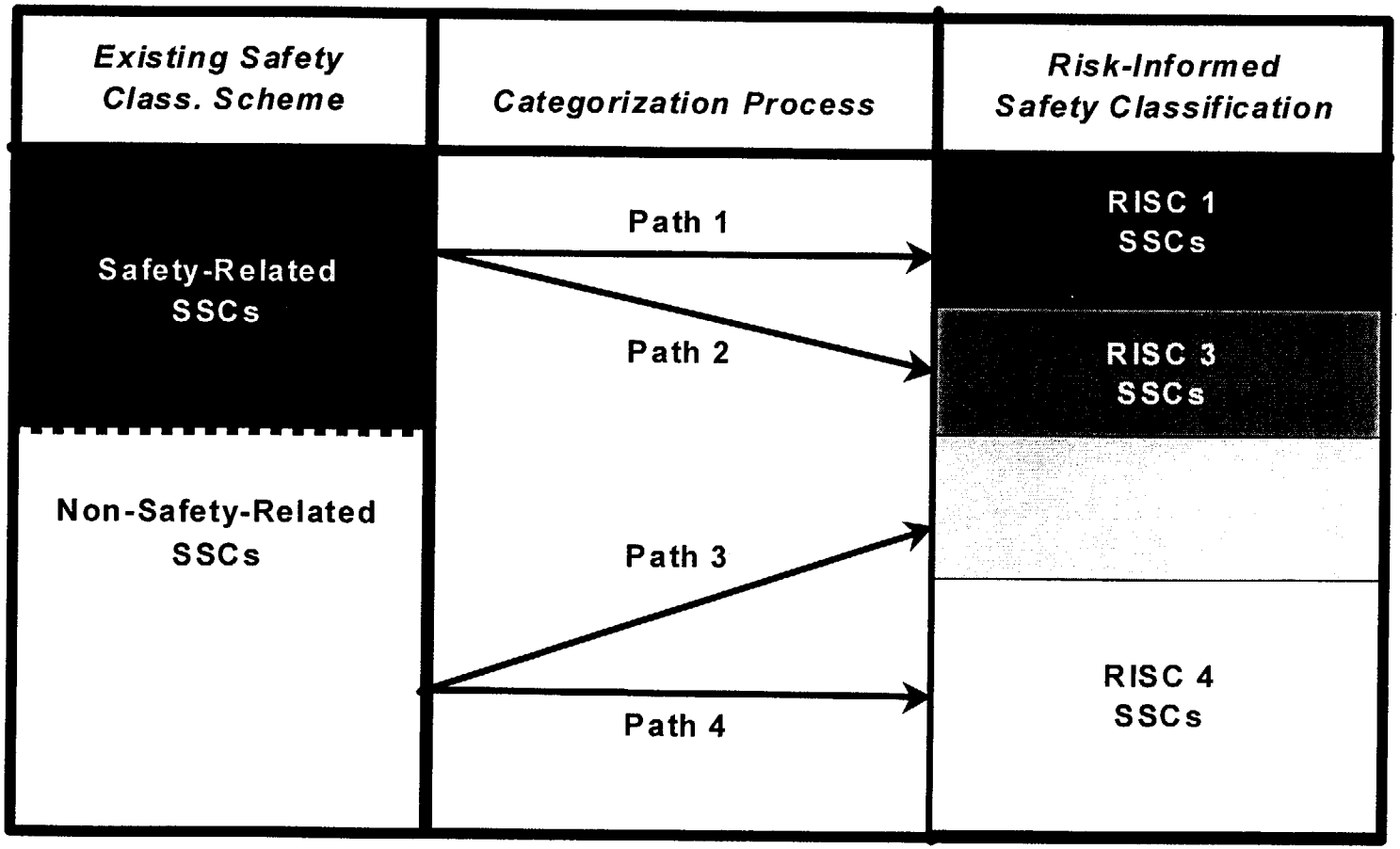
- NEI Guidelines, NEI 00-04, are adopted
- Process considers separate and integrated risk contributions
- Criteria from NEI 00-04 for Safety Significance are used
- Functions for the SSCs are defined
- Safety Significance assessed for each function from each risk contributor (e.g., seismic, fire, etc.)
- Results are presented as input to IDP (i.e., expert panel)

Risk Informed Safety Classifications (RISC)

Probabilistic Significance	Safety Related	Non-Safety Related
High	**RISC-1 SSCs** Safety Related, Safety Significant *Reliability Assurance*	**RISC-2 SSCs** Non-Safety Related, Safety Significant *Reliability Assurance*
Low	**RISC-3 SSCs** Safety Related, Low Safety Significant *Maintain Function* *Commercial (BOP) Programs*	**RISC-4 SSCs** Non-Safety Related, Low Safety Significant *Commercial (BOP) Programs*

DETERMINISTIC SIGNIFICANCE

Conceptual Presentation of Classification Pathways



Pilot Systems Selection

Criteria for Pilot System Selection

- Generally applicable to most BWRs
- Include both types of systems:
  - Systems that would go from RISC-1 to RISC-3

    AND
  - Systems that would go from RISC-4 to RISC-2
  - Able to exercise the NEI Guidelines and the PRA

Approach for Pilot System Selection

- Survey BWRs to assess which systems meet criteria

Pilot System Selection Results

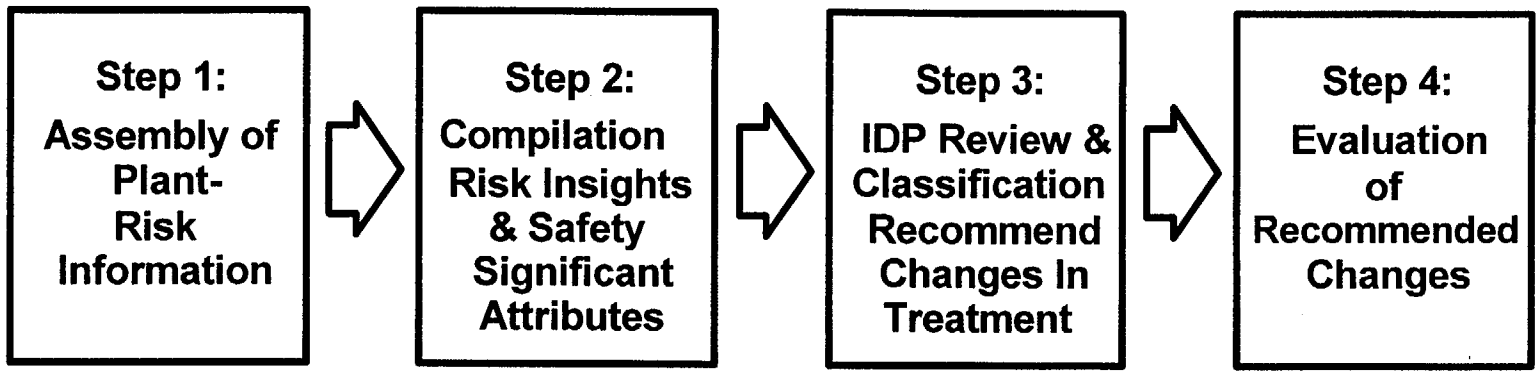
Selected Pilot Systems

- SBGTS
- Feedwater
- Core Spray

Other Possibilities

- RHR C (BWR-5 and BWR-6)
- Normal SW
- Air

NEI 00-04 Risk Informed Categorization Process



Resources

- ✓ Internal Events PRA
- ✓ Fire PRA/FIVE
- ✓ Seismic PRA/Seismic Margins
- ✓ External Events PRA/ IPEEE Screening
- ✓ Shutdown PSA/ Shutdown Safety Management
- ✓ SSC Design Basis Information

Includes

- ✓ Risk Significance Assessments
- ✓ Integrated Risk Significance Assessment
- ✓ Initial Identification of Safety Significance
- ✓ Identification of Safety Significant Attributes
- ✓ Basis for Low Safety Significance for Safety RelatedSSCs

Considers:

- ✓ Risk Insights
- ✓ Safety Significant Attributes
- ✓ Operating History
- ✓ Deterministic Considerations
- ✓ Defense-in-Depth
- ✓ Safety Margins

Determines

- ✓ Specific Changes In Treatment
- ✓ Monitoring

Includes:

- ✓ Qualitative Assessment of Treatment Impacts
- ✓ Risk Sensitivity Studies
- ✓ Evaluation of Monitoring Effectiveness

Relationship of SSCs and Functions

- Components are the basic measure of what special treatment is to be performed
- Functions served by the components may be treated differently in the PRA models with different failure modes
- Components are collected together within system function, e.g., containment isolation, injection
- Thus far, a component is safety significant if
  ANY failure mode
  for ANY function
  is safety significant

Summary of System, Functions, and Safety Classification

Systems	*Trains*	*Functions*	*Safety Related/ Non-Safety Related*
Core Spray	A	RPV Injection	Safety Related
	B	Spray Distribution	Safety Related
		Debris Retention	Non-Safety Related
		Flood Prevention	Non-Safety Related
		Keep-Fill	Non-Safety Related
		Containment Isolation/ RPV Boundary	Safety Related
		Containment Flooding	Non-Safety Related
SGTS	A	Filter Effluent	Safety Related
	B	Maintain Negative Pressure in Secondary Containment	Safety Related
		Containment Vent (2")	Non-Safety Related
Feedwater	A	RPV Makeup	Non-Safety Related
	B	Containment Isolation/RPV Boundary	Safety Related
	C	HPCI, RCIC, RWCU Flow Paths	Safety Related
		Zinc and H_2 Flow Path to RPV	Non-Safety Related
		High Pressure FW Heating	Non-Safety Related
		Low Pressure FW Heating	Non-Safety Related
		Feedwater Flow Regulation	Non-Safety Related

Quad Cities Analytical Tools

	Tools	Reviewed
Internal Events PRA	Updated	BWROG, Exelon, Consultants
Fire Events PRA	Updated	NRC, Exelon, Consultants
SMA	Deterministic	Exelon
Outage Mgt. Guide	Deterministic	Exelon
Other External Events	Deterministic	Exelon

PEER REVIEWS / QUALITY ASSESSMENT

- Internal Events
  - Approach is clear (uses NEI 00-02)
  - Documented Peer Review comments available
- Fire / Other
  - Internal events Peer Review comments assessed for applicability to Fire and "Other" PRAs
  - Fire PRA has also been reviewed by NRC, NRC consultants, and extensively within Exelon
- Seismic / Shutdown
  - No PRA inputs available or used in Quad Cities pilot process for Option 2

Internal Events - PRA Suggested Attributes (NEI 00-04 Section 2.4.1.2)

- Update within the last 36 months
- Peer Review is one effective method of ensuring quality
- PRA will have been subject to controls to ensure quality
- PRA Peer Review grades of 3 or higher are desired for Option 2 applications
- Review all elements with grades below 3
- All A&B F&Os should be reviewed and impact assessed

Quality

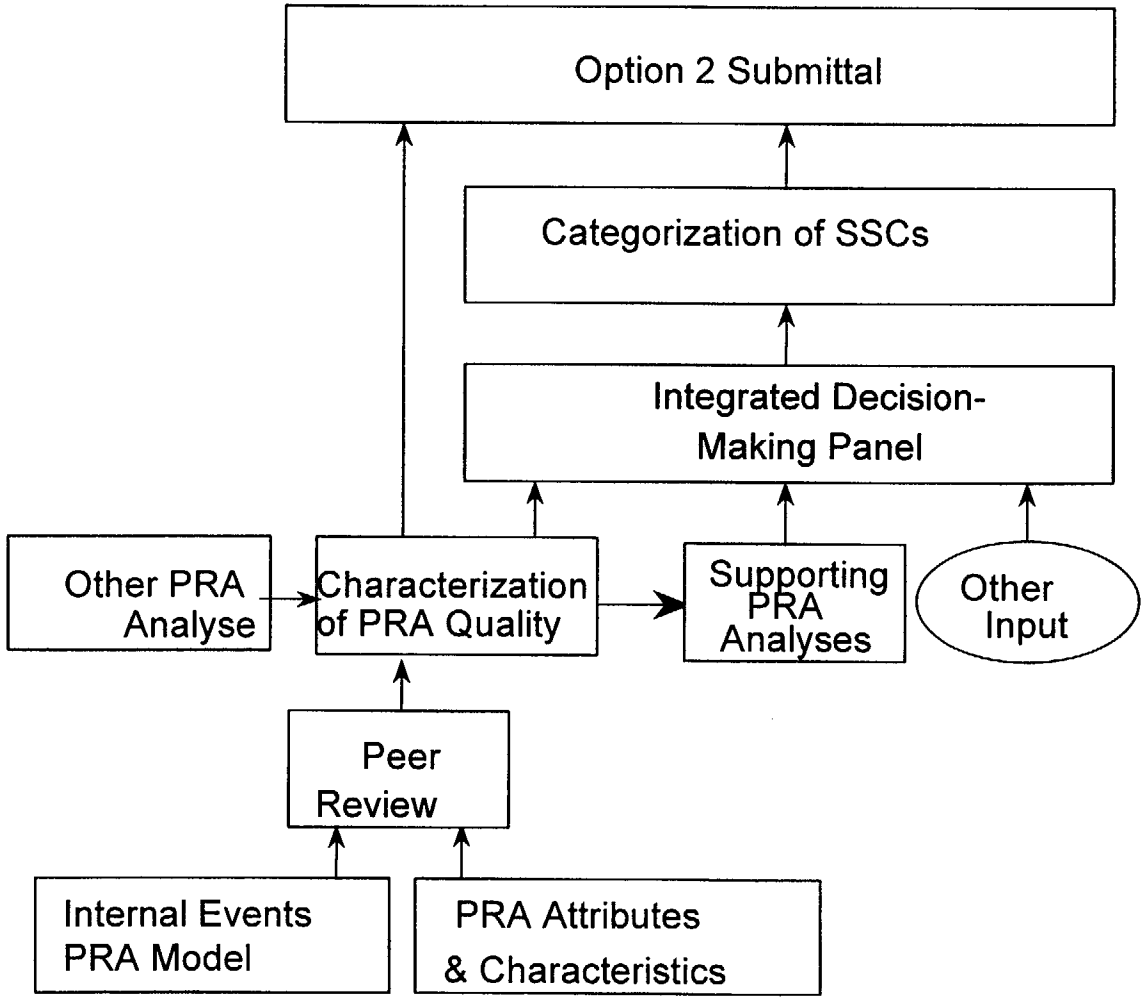
The PRA Peer Review Process has determined the following and documented the results:

- PRA modeling of the internal initiating events at full power operation is available. The PRA is capable of quantifying core damage frequency (CDF) and large early release frequency (LERF) and reasonably reflects the as-built and as-operated plant.
- The PRA has been performed correctly, in a manner that is consistent with accepted practices, in terms of the scope and level of detail for the hazards evaluated.
- The PRA is adequate for risk informed applications in terms of scope and quality.
- No element received a grade below Grade 3.

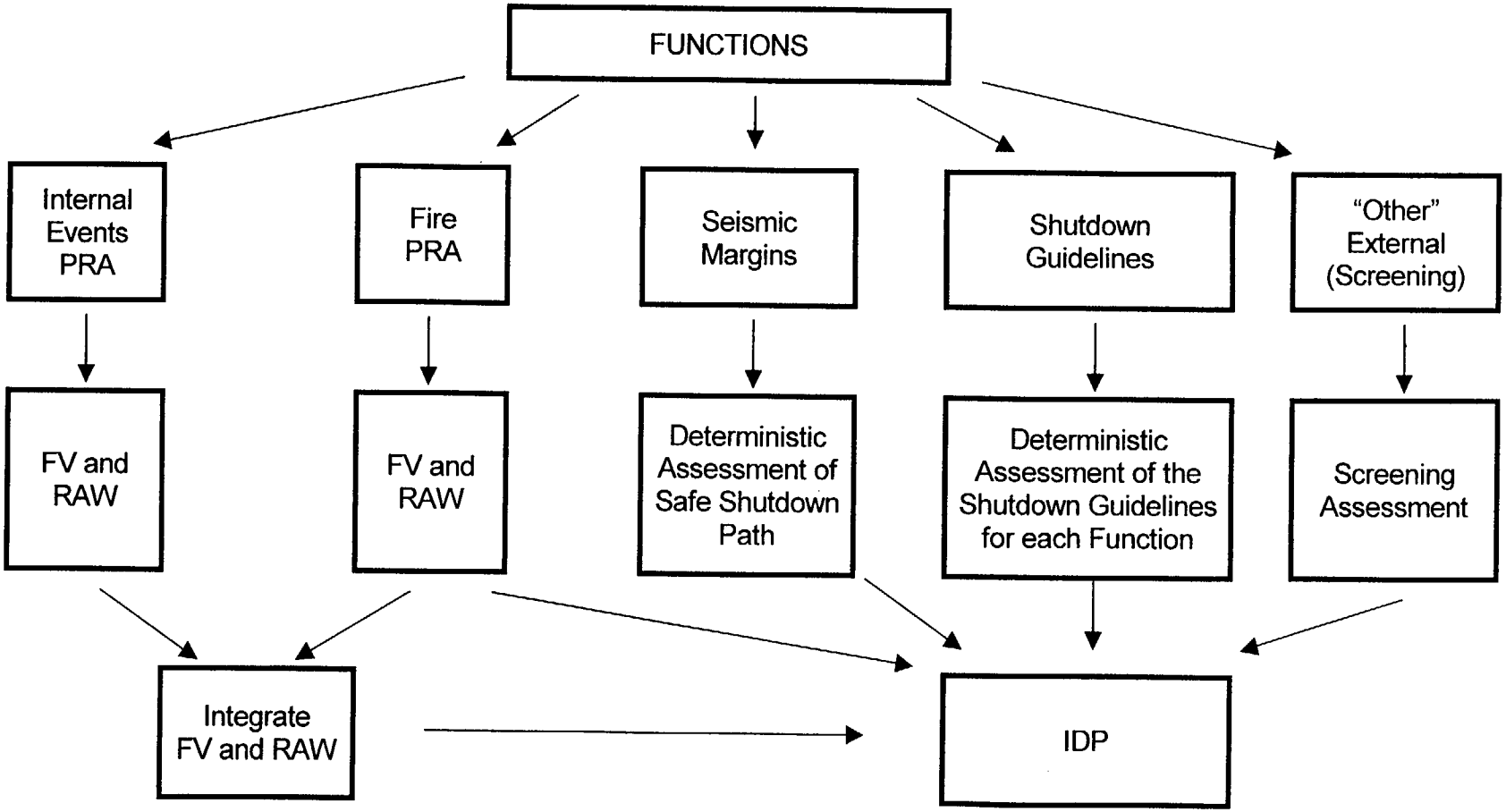
Summary of Other Quad Cities Inputs to the Risk-Informed Process

Risk Contribution	Methodology	PRA Quantification	Quality
Internal Fires	Full Level 1 Fire PRA consistent with current technology. No LERF model for fire analysis.	Quantification Available.	Similar model to Internal Events. Reviewed by NRC/NRC Contractors/Exelon/Exelon Contractors
Seismic	Seismic Margin assessment performed in support of QC IPEEE submittal.	No PRA model	IPEEE reviewed by NRC.
Shutdown	ORAM/SENTINEL using qualitative deterministic approach.	No PRA model	Consistent with NEI 91-06 Reviewed by Exelon Reviewed by Consultant

Process For Assuring PRA Quality In Option 2 Categorization



Compile Risk Insights by Function and Risk Contributor



Decision Criteria

- FV > 0.005 = High Safety Significance

or

- RAW > 2.0 = High Safety Significance

Results Core Spray Risk Insight Results - Internal Events

Function	Importance				Complicated Initiating Event	Defense-In-Depth
	CDF		LERF			
	FV	RAW	FV	RAW		
RPV Injection	3E-5	1.12	0.0	1.13	None	Adequate
Spray Distribution	0.0	1.0	0.0	1.0	None	Adequate[1]
Containment Isolation/RPV Boundary	NE [2]	5.8-10.6	NE [2]	7.7-14.4	Yes	Marginal
Debris Retention	0.0	1.0	0.0	1.0	None	Adequate
Flood Prevention	[3]	[5]	[3]	[5]	None[4]	Adequate
Keep-Fill	0.0	1.0	0.0	1.0	None	Not Required
Containment Flooding	0.0	1.0	0.0	1.0	None	Adequate

Footnotes

(1) No Defense-In-Depth for the spray pattern; but this is not required to meet the safety significance goals

(2) Not Estimated; function is safety significant due to RAW.

(3) Importance measures were not calculated because the accident sequences were found to be so low as to be truncated from the PRA.

(4) The failure of the CS pipe itself is not considered to be a complicated initiating event.

(5) RAW calculations for pipe breaks are not considered appropriate and these importance measures have not been calculated. (Note, these SSCs have been truncated from the PRA model for Quad Cities internal flood.)

SBGTS

- SBGTS does not affect CDF
  - Therefore, importance measures in Level 1 are by definition FV = 0.0; RAW = 1.0
- SBGTS has been evaluated in detail with deterministic thermal hydraulic analysis
- SBGTS mitigation potential relative to LERF is negligible at Quad Cities
  - Again, importance measures in Level 2 are by definition FV = 0.0; RAW = 1.0

Results - SBGTS Risk Insight Internal Events

Function	Importance[1]				Complicated Initiating Event	Defense-In Depth
	CDF		LERF			
	FV	RAW	FV	RAW		
Filtration	0.0	1.0	0.0	1.0	None	Redundant trains of SBGTS
Maintain Negative Pressure in Secondary Containment	0.0	1.0	0.0	1.0	None	None
Containment Vent (2")	0.0	1.0	0.0	1.0	None	Multiple Systems

[1] The importance measures are quantified here using the implicit modeling of SBGTS in the PRA. In other words, the SBGTS effect on CDF and LERF has been evaluated as part of the PRA and determined to not impact either surrogate risk measure. Therefore, the importance measures can be estimated.

Results - Feedwater Risk Insight Internal Events

Function	Importance[1]				Complicated Initiating Event	Defense-In-Depth
	CDF		LERF			
	FV	RAW	FV	RAW		
Containment Isolation	0.0	2.2	0.0	2.6	Yes	Marginal
RPV Make-up	1.4E-3	3.98	0.0	3.13	Yes	Adequate
HPCI, RCIC, & RWCU Flow Path to RPV	(1)	(1)	(1)	(1)	See Containment Isolation[1]	(1)
Miscellaneous	0.0	1.0	0.0	1.0	None	Not Required
FW Flow Regulation	0.0	1.0	0.0	1.0	Yes	Adequate

(1) The flow path to the RPV has been identified in the Containment Isolation discussion as of high safety significance.

Results - Core Spray Risk Insight Fire Events

Function	Importance CDF		Defense-In-Depth
	FV	RAW	
RPV Injection CS A	2.6E-3	1.3	Adequate
RPV Injection CS B	4.5E-3	1.5	Adequate
Spray Distribution	0.0	1.0	Adequate[1]
Containment Isolation	[2]	[2]	Marginal
Debris Retention	0.0	1.0	Adequate
Flood Prevention	[3]	[4]	Adequate
Keep-Fill	0.0	1.0	Not Required
Containment Flooding	0.0	1.0	Adequate

Footnotes

[1] No Defense-In-Depth for the spray pattern; but this is not required to meet the safety significance goals

[2] Not Estimated; function is safety significant due to RAW from internal events. Fire PARA does not identify any risk significant sequences.

[3] Importance measures were not calculated because the accident sequences were found to be so low as to be truncated from the PRA.

[4] RAW calculations for pipe breaks are not considered appropriate and these importance measures have not been calculated. (Note: these SSCs have been truncated from the PRA model for Quad Cities internal flood.)

Break

Summary of Sensitivity Cases Identified by NEI 00-04

Case	Sensitivity Description	Implementation in the Model
1A	Increase all human error basic events to their 95th percentile value.	Instead of increasing by a factor of 3.73, the HEPs were increased to 0.1. This resulted in strong HEP emphasis.
1B	Decrease all human error basic events to their 5th percentile value.	Decreased all HEPs by a factor of 26.8; equivalent to an Error Factor of 10.
2A	Increase all component common cause events to their 95th percentile value.	Increased all CCF events by a factor of 3.73; equivalent to an Error Factor of 10.
2B	Decrease all component common cause events to their 5th percentile value.	Set all CCF to zero; this results in eliminating CCF.
3	Set all maintenance unavailability terms to 0.0.	Set all maintenance unavailability terms to 0.0.
4A	Increase all component random failure events to their 95th percentile value.	Increase all B.E by a factor of 2.4 except Initiators, HEPs, maintenance unavailabilities.
4B	Decrease all component random failure events to their 5th percentile value.	Decrease all B.E. by a factor of 3.75 except Initiators, HEPs, maintenance unavailabilities.

IDP Use of Sensitivity Results

- NEI 00-04 does not dictate the assignment of safety significance to an SSC based solely on a sensitivity calculation result
- IDP makes the final decision on categorization based on a review of sensitivity results along with the Base Case
- IDP would likely find it hard to disposition an SSC as low safety significant if several sensitivities showed it to be safety significant

Option 2 Sensitivity Case 1a Importance Measures for RPV Injection Function (Increased HEP Emphasis)

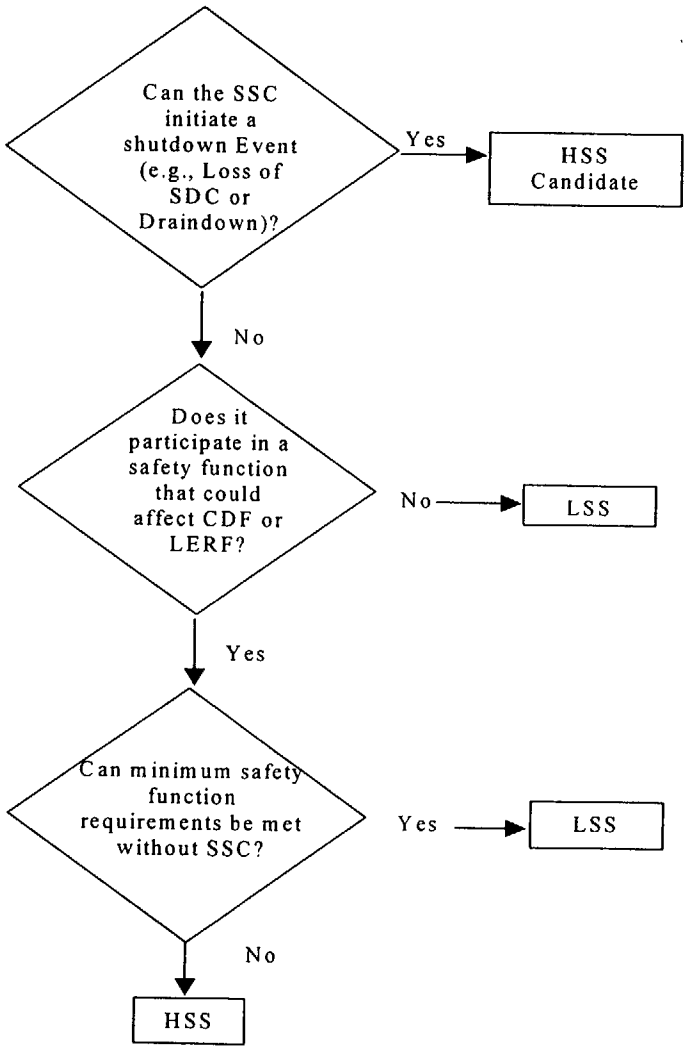
Train/Systems	Internal Events			
	CDF[1]		LERF[2]	
	FV	RAW	FV	RAW
CS Train 1A	1.60E-06	1.00	0.00	1.00
CS Train 1B	1.60E-06	1.00	0.00	1.00
CS System	3.20E-06	1.02	0.00	1.02
FW Train 1A	0.00	1.00	0.00	1.00
FW Train 1B	6.60E-05	1.04	1.15E-05	1.02
FW Train 1C	0.00	1.00	0.00	1.00
FW System	6.60E-05	6.36	1.15E-05	5.78

Notes:
(1) Sensitivity Case 1A internal events CDF = 1.1E-4/yr (Units 1 & 2)
(2) Sensitivity Case 1A internal events LERF = 9.49E-5/yr (Units 1 & 2)

Seismic - Deterministic Analysis Safe Shutdown Path

Safe Shutdown Function	Primary Shutdown Path	Backup Shutdown Path
Reactor Reactivity Control	Reactor Protection System Control Rod Drive System	N/A
Reactor Coolant Pressure Control	Automatic Depressurization Valves (B, C)	Automatic Depressurization Valves (E, D)
Decay Heat Removal	Residual Heat Removal RHR Loop A RHR Service Water RHRSW Loop A	RHR Loop B RHR Loop B
Reactor Coolant Inventory Control	High Pressure Coolant Injection (HPCI) RHR Loop A	 RHR Loop B

Deterministic Safety Significance for Shutdown Safety Assessment



Legend

LSS – Low Safety Significance

HSS – Safety Significant

Shutdown

- Core Spray is safety related
- It can fulfill the RPV make-up requirement
- Even with core spray unavailable, the "minimum" requirements for the safety function can be met

Risk-informed SSC(s) Assessment Worksheet
SSC(s) Evaluated: Core Spray
(Except Containment Isolation Valves)

Hazards		Potentially Safety Significant	Potentially Low Safety Significant	Not Addressed	Comments
Internal Events	CDF		X		PSA
	LERF		X		PSA
Fire	CDF		X		Fire PSA
	LERF		X		Estimated
Seismic	CDF		X		Seismic Margin
	LERF		X		Seismic Margin
"Other" External Events	CDF		X		IPEEE Screening
	LERF		X		IPEEE Screening
Low Power Shutdown	CDF		X		RMGs
	LERF		X		RMGs
Integral	CDF		X		
	LERF		X		

Risk-informed SSC Assessment Worksheet

SSC(S) EVALUATED:	**Core Spray (Except Containment Isolation Valves)**
SAFETY RELATED:	YES{ X NO{
DESIGN BASIS FUNCTION (S) SUPPORTED:	**RPV Injection**
PRA FUNCTIONS SUPPORTED:	RPV Injection (except CS injection valves)
INITIATING EVENT IMPACT:	Core Spray does not lead to a complicated initiator (except CS injection valves).
SENSITIVITY RESULTS:	Sensitivity Results Confirm the Base Case Information
DEFENSE IN DEPTH/COMMON CAUSE ASSESSMENT:	Defense-in-Depth examined and multiple redundant methods available to fulfill the function.
INTERNAL EVENTS RISK CONTRIBUTION	Importance measures from the internal events PRA show low safety significance when evaluated consistent with NEI 00-04 Guidelines and risk metrics
OTHER RISK CONTRIBUTIONS	Seismic, Fire, Shutdown, and "Other" external event evaluations do not indicate potential risk contributions that meet the NEI 00-04 guidelines for safety significant.
INTEGRATED IMPORTANCE IMPACTS	The calculated integrated importance measures are below the NEI Guidelines, NEI 00-04, for safety significance using the FV and RAW risk metrics.
SAFETY SIGNIFICANCE	YES{ NO{X

Results Conclusion - Safety Significance Summary by System, Function, and Assessment Characteristics

System Component	Function	Assessment Characteristic						Conclusion
		Internal Events PRA[1]	Fire Events PRA	Seismic Margins	Other External Events Screening	Shutdown	Integrated Results	
Core Spray	RPV Injection	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	Containment Isolation/RPV Boundary	HSS	LSS[2]	LSS	LSS	HSS	HSS	HSS
	Spray Distribution	LSS	LSS[2]	LSS	LSS	LSS	LSS	LSS
	Debris Retention	LSS	LSS[2]	LSS	LSS	LSS	LSS	LSS
	Flood Prevention	LSS	LSS[2]	LSS	LSS	LSS	LSS	LSS
	Keep-Fill	LSS	LSS[2]	LSS	LSS	LSS	LSS	LSS
	Containment Flooding	LSS	LSS[2]	LSS	LSS	LSS	LSS	LSS
SBGTS	Filtration	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	Maintain Negative Pressure in RB	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	Containment Vent	LSS	LSS	LSS	LSS	LSS	LSS	LSS

Legend

HSS = Safety Significant

LSS = Low Safety Significance

Results Conclusion - Safety Significance Summary by System, Function, and Assessment Characteristics

System Component	Function	Assessment Characteristic						Conclusion
		Internal Events PRA[1]	Fire Events PRA	Seismic Margins	Other External Events Screening	Shutdown	Integrated Results	
Feedwater	RPV Make-Up	HSS	LSS	LSS	LSS	LSS	LSS	HSS
	Containment Isolation	HSS	LSS	LSS	LSS	HSS	LSS	HSS
	HPCI, RCIC, SSMP, RWCU Flow Paths	HSS	LSS	LSS	LSS	HSS	LSS	HSS
	Zinc and H_2 Flow Path to RPV	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	High Pressure FW Heating	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	Low Pressure FW Heating	LSS	LSS	LSS	LSS	LSS	LSS	LSS
	FW Flow Regulation	HSS	LSS	LSS	LSS	LSS	n/a	HSS

Legend

HSS = Safety Significant

LSS = Low Safety Significance

Notes to Table

(1) May include determination based on: (1) PRA Importance; or (2) Complicated Initiating Event; or (3) Lack of Defense-in-Depth

(2) The determination of low safety significance is determined by correspondence with the internal events evaluation. The fire risk evaluation did not identify any quantitative impacts or the NEI 00-04 risk metrics associated with this function.

Conclusions

Core Spray is low safety significance for all functions and for all inputs to the IDP with the following exception:

- Containment isolation valves (injection valves) and RPV Pressure Boundary which are found to be safety significant

SBGTS is low safety significance

Feedwater functions of RPV Injection, RPV boundary, injection pathway, and containment isolation are safety significant based on the internal events PRA

Conclusions

- NEI 00-04 provides a viable approach to Option 2 Risk Informed Regulation
- Results of the process are consistent with engineering judgements

Special Treatment Assessment

PD Knecht, GE

Special Treatment Considerations

- A listing of regulations developed by NEI & NRC for Option 2 consideration
  - Voluntary program
  - Allows for a change in application of regulations to SSCs
  - Not a change in regulation
  - Not a change to design criteria (addressed in Option 3)
- Special treatment regulations generally require:
  - Added assurance that functional requirements are met in operation and maintenance of the plant
  - Deal with QA, testing, reporting and documentation
- Goal of Special Treatment
  - Apply controls appropriate to the safety significance of the components
  - Reduce controls on non-safety significant items

Treatment Overview for Pilot

- Pilot is well along with categorization
- In process of defining which regulations should be considered
- May depend on the extent of change to existing plant programs

Special Treatment Regulations

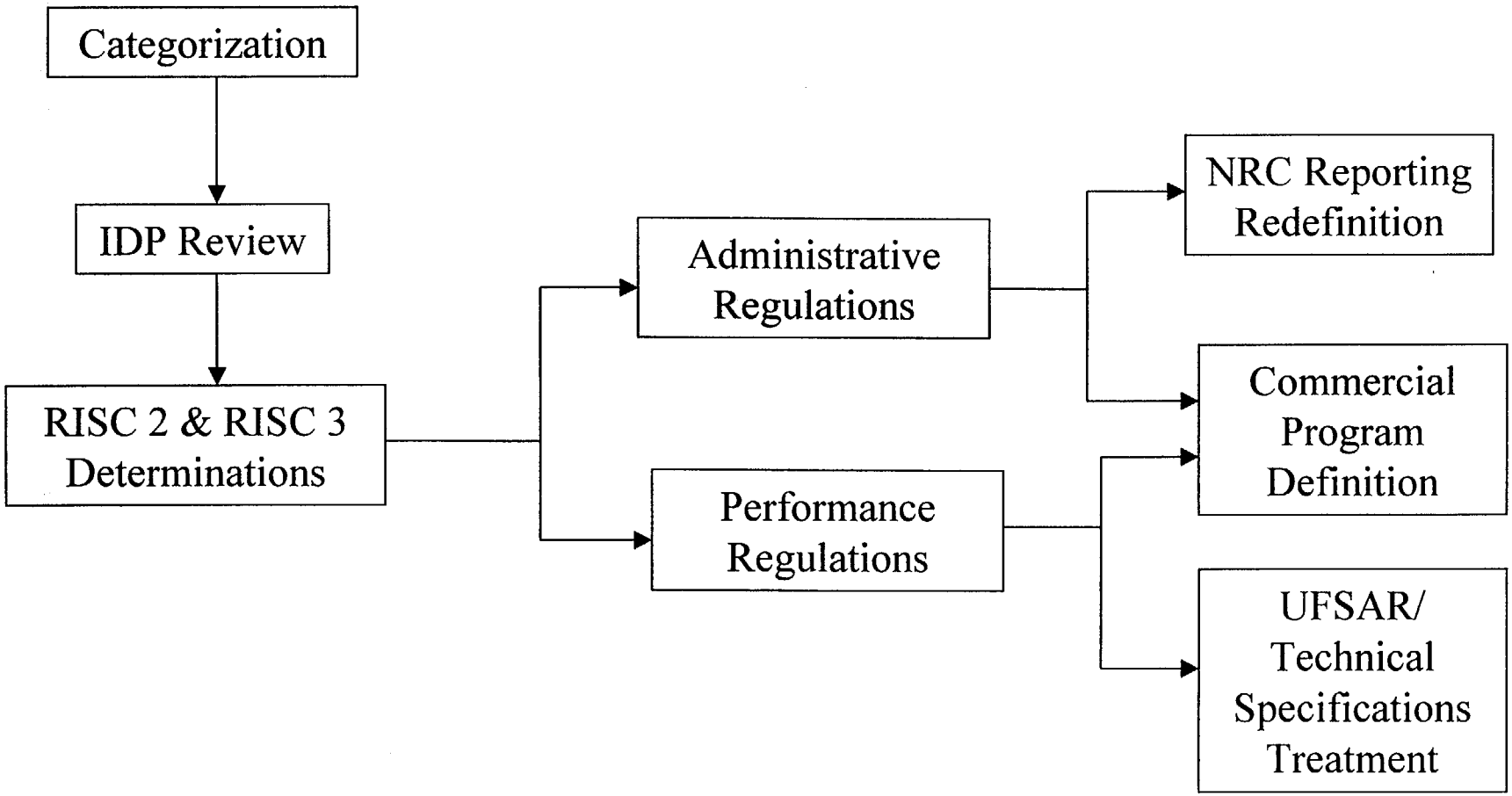
Not addressed in the Pilot Program

10 CFR 50.2	Definitions
10 CFR 50.34	Contents of applications; technical information
10 CFR 50.44	Standards for Combustible Gas Control System in Light-water-cooled power reactors
10 CFR 50.55	Conditions of Construction Permits
10 CRF 50.48	Fire Protection" and 10 CFR 50, Appendix R,
10 CFR 50.71	Maintenance of Records, Making of Reports – (UFSAR Updates)
10 CFR 52	Early Site Permits; Standard Design Certifications; and combined licenses
10 CFR 50, Appendix A	General Design Criteria

Addressed in the Pilot Program

10 CFR 21	Reporting of Defects and Noncompliance
10 CFR 50.59	Changes, Tests and Experiments
10 CFR 50.72	Immediate notification requirements
10 CFR 50.73	Licensee Event Report System
10 CFR 50.54 and 10 CFR 50, Appendix B	Quality Assurance
10 CFR 50.36	Technical Specifications
10 CFR 50.49	Environmental Qualification of electric equipment important to safety
10 CFR 50.55A	Codes and Standards
10 CFR 50, Appendix J	Primary Reactor Containment Leakage Testing
10 CFR 50.65	Maintenance Rule
10 CFR 100	Reactor Site Criteria

Implementation of Special Treatments



Implementation Approach

- Validate classifications based on IDP considerations
  - Events & conditions not modeled in PRA
  - Adequate defense in depth
  - Adequate safety margins
  - Identification and maintenance of functional capabilities
  - Identify/Justify potential exemptions to regulations
- Submit exemption requests
- Modify site programs, as appropriate
  - USAR updates
  - Reporting procedures
  - Commercial Program

Potential Treatment Elements

- Monitoring & Assessment
  - Based on importance to Safety functions (Risk)
  - Implementation via Maintenance Rule (RISC-1 & 2)
- Corrective Action Program
  - Documented defects and deviations
  - Restoration of performance
- Maintenance Program
  - Maintenance Rule
  - Preventive Maintenance
  - Predictive Maintenance

Potential Treatment Elements

- Configuration Control
  - Design and Licensing Basis
  - 50.59 Program
  - Design Change Control
- Procurement Program
  - Functional performance specifications
  - Environmental service
  - Seismic functionality
  - Receipt Inspection

Option 2 Changes (RISC-3)

- Commercial Programs
  - Potential reduction in purchasing and dedication requirements
  - Potential reduction in scope of safety evaluations
  - Potential reduction in required ASME testing (use code cases?)
  - Potential reduction in Maintenance Rule scope
  - Potential reduction in Generic Letter applicability
- NRC Reporting Redefinition
  - Exemption for RISC-3 functional failures
- UFSAR/ Technical Specifications Treatment
  - Potential relocation through RITS program

Option 2 Changes (RISC-2)

- Commercial Programs
  - Potential increase in corrective action programs
  - Potential increase in Maintenance Rule scope
- NRC Reporting Redefinition
  - Potential requirements for RISC-2 functional failures
- UFSAR/ Technical Specifications Treatment
  - USAR documentation of classification process (RISC-2 & 3)
  - Potential description of commercial program (RISC-2 & 3)
  - Potential description of RISC-2 functions
- Implementation
  - Potential added administrative controls depending on current plant procedures and processes;
  - Schedule of implementation

Conclusions

- RISC-3 components show potential for plant benefit
  - Implement commercial program rather than full regulatory treatment
  - Submit exemption requests for Quad Cities pilot systems
- RISC-2 functions show potential for safety benefit
  - Phased application of NEI guidelines to identify all RISC-2 functions
  - Implement program changes, as required

Summary

Eric Jebsen

BWROG/NRC Interaction

- September 2000 – NRC/BWROG Management Meeting
  - NRC asked for a letter documenting the BWROG Option 2 pilot program
- October 2000
  - BWROG submitted a letter
- November 2000
  - NRC responded to the letter

NRC Comments on Program

- NRC is reviewing PRA Peer Review Guidelines for use in Option 2 Pilot applications as a measure of PRA quality.
- BWROG pilot program should thoroughly test the NEI guidelines.
- BWROG should coordinate through one entity, assumed to be NEI.
- BWROG should apply the pilot to a variety of systems and identify the regulations to be exempted.

NRC Issue with Program

Phase 2b exclusion, SECY 98-300

The grant of limited exemptions to a limited number of plants for purposes of pilot testing does not pose any special problems but the repeated issuance of a large number of exemptions which, considered together, represent a fundamental alteration of the conceptual nature of the licensing basis, to more than a limited number of plants essentially constitutes a generic change to the regulatory requirements in Part 50.

Summary

- Pilot work is in process
- The work will provide a proof of principle
- There is no reason to believe that an exemption request is not viable