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AR Number	: 00789344				Linked ARs
Aff Fac:	Byron	AR Type:	CR	Status:	COMPLETE
Aff Unit:	01	Owed To:	A8852CAP	Due Date:	11/20/2009
Aff System:	MS			Event Date:	06/12/2008
CR Level/Class:	4/D			Disc Date:	06/12/2008
How Discovered:	H02			Orig Date:	06/23/2008
Action Requ	est Details				
Subject:	ERROR IN N	1S TUNNEL PRESSUF	RIZATION CALCUL	ATION	
Description:	Originator: Supv Contacted: Solution Second				

There are 3 mitigating factors to offset the blowout panel concerns:

1. A recent change to the UFSAR negates the need to consider breaks in the MSIV room itself (the current limiting location). However regulatory correspondence between ComEd and NRC in an SER dated 1/07/85 still requires breaks to be postulated in the tunnel. Calculation 3C8-0282-0001 does contain results for a break in the MS tunnel and gives a peak pressure of 13 psi in the MSIV room and 16.5 psi in the tunnel just outside the MSIV room; note that although these pressures assume that the blowout panels function, it does demonstrate that a break outside the room results in lower pressures in the room.

2. The availability of the vent path via the access door at 401 elevation to open at 1.5 psid is not in question. This is supported by reviewed of calculation 3C8-0182-0001 for a comparable door.

3. A simplified, informal model of the MSIV rooms (without any blowout panels/HVAC dampers or door) was constructed by Corporate Engineering using an approved software (GOTHIC). The significant change made was in using more realistic mass and energy inputs from RELAP. Using this model that highest pressure in the MSIV room (for a break in the room ) is 21.3 psig. Note that although this is slightly higher than the 19.7 psig currently assumed in the UFSAR the expected value for a break in the tunnel would be a few psi lower (based on paragraph 1 above).

Based on the above, I believe there is some assurance that structures and components will not be exposed to pressures resulting in excessive degradation or failure. Sargent and Lundy has been contacted for a more refined analysis on an expedited basis. Additional IRs will be written if contrary information is noted.

Immediate actions taken: Discussed with Corporate Engineering, S&L, Bwd Engineering.

Recommended Actions:

Work Group Eval to Design Engineering to document results of S&L study and create actions for long term resolution of issue.

Operable Basis:

The MSIV rooms, contained components, and AF tunnels/components remain operable because of the following three points: 1. A recent change to the UFSAR negates the need to consider breaks in the

MSIV room itself (the current limiting location). However regulatory correspondence between ComEd and NRC in an SER dated 1/07/85 still requires breaks to be postulated in the tunnel. Calculation 3C8-0282-0001 does contain results for a break in the MS tunnel and gives a peak pressure of 13 psi in the MSIV room and 16.5 psi in the tunnel just outside the MSIV room; note that although these pressures assume that the blowout panels function, it does demonstrate that a break outside the room

results in lower pressures in the room.

2. The availability of the vent path via the access door at 401 elevation to open at 1.5 psid is not in question. This is supported by reviewed of calculation 3C8-0182-0001 for a comparable door.

3. A simplified, informal model of the MSIV rooms (without any blowout panels/HVAC dampers or door) was constructed by Corporate Engineering

using an approved software (GOTHIC). The significant change made was in using more realistic mass and energy inputs from RELAP. Using this model that highest pressure in the MSIV room (for a break in the room ) is 21.3 psig. Note that although this is slightly higher than the 19.7 psig currently assumed in the UFSAR the expected value for a break in the tunnel would be a few psi lower (based on paragraph 1 above).

Based on the above, it is believed there is some assurance that structures and

components will not be exposed to pressures resulting in excessive degradation or failure.

## Reportable Basis:

SAF 1.4 and SAF 1.8 were referenced to determine if any of the known information would be reportable. It has been determined that additional study and calculations need to be completed in order to fully understand the full design implications, if any, resulting from the new information. A new IR will be initiated if a reportable condition is discovered.

Reviewed by: 06/23/2008 23:09:37 CDT Reviewer Comments: Assign actions as recommended.

SOC Reviewed by: 06/24/2008 09:32:15 CDT SOC Comments: EVAL to Design Engineering to evaluate the issue and generate actions, as

appropriate. Review for Clock Reset. - (**1**) 6/24) SOC 062408

Department review performed by: Evaluation Comments: 07/03/2008 10:17:57 CDT

Condition/Problem Statement:

During the review of design basis calculations for determination of the effects of a high-energy line break (HELB) event in the Main Steam Tunnel / Safety Valve Room, it was determined that certain assumptions made in the calculation to support input parameters could not be verified in the field. Specifically, the assumption that blowout panels existed in the upper level of the Safety Valve Rooms could not be confirmed by either drawing review or field walkdown. This resulted in potentially non-conservative results for the HELB pressure event reflected in the output of the computer analysis that used these assumed vent paths as an input parameter. In addition, a portion of the area attributed to blowout panels is actually occupied by the ventilation fans and dampers located at this level. The effect on the assumed HELB venting area could not be readily determined.

## Statement of Cause:

The cause of this event was due to an assumption made in the HELB event calculation that was not validated against the physical design of the Safety Valve Room. Since this calculation was performed in 1982, it cannot be readily determined why this assumption was not validated.

## Extent of Condition:

Periodically, erroneous or unvalidated assumptions (as well as errors) are found in calculations. These latent issues are typically found while researching these documents for historical information during modification design activities or resolving other plant issues.

## Evaluation of any SOC Comments:

Although latent issues may exist in other design basis documents, it must be assumed that, in general, the calculations are accurate since they were performed under a Quality Assurance program that requires a qualified preparer, with an independent review (For Safety-Related activities). Therefore, a review of historical documentation should only be performed on an as-needed basis and any latent issues identified should be addressed

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а	as necessary through the corrective action program.
T ( a	This specific issue has been addressed under Operability Evaluation 07-006 (EC# 366685, Rev. 3). The operability evaluation process is addressing any additional corrective actions via Action Tracking.
S o is	Since the invalid assumption was made in 1982 and there was limited opportunity to identify it prior to this current issue, a crew clock reset is not warranted.
Т	Therefore, no additional actions are required for this issue.
M C e	Manager review performed by: 07/03/2008 11:13:14 CDT Manager Comments: Operability Evaluation 07-006 (EC# 366685, Rev. 3), referenced in this evaluation, was requested in related IR 790428 and was approved on 7/2/08.
I	I have reviewed and approve this evaluation.
M M P	MRC Reviewed by: 07/07/2008 11:56:55 CDT MRC Comments: Per MRC 7-7-08 created ACIT.

Assign #: 01					AR #: <u>00789344</u>		
Aff Fac:	Byron	Assign Type:	TRKG	Status:	COMPLETE		
Priority:		Assigned To:		Due Date:	07/09/2008		
Schedule Ref:		Prim Grp:	ACAPALL	Orig Due Date	:		
Unit Condition:		Sec Grp:					
Assignment Details							
Subject/Description: ERROR IN MS TUNNEL PRESSURIZATION CALCULATION							
Assignment C	Completion						
In Progress Notes:							
Completion Notes:							

Assign #: 02 AR #: <u>00789344</u>							
Aff Fac: By Priority: Schedule Ref: Unit Condition: Assignment Deta	vron	Assign Type: Assigned To: Prim Grp: Sec Grp:	ACIT A8852NESDR	Status: Due Date: Orig Due Date:	COMPLETE 08/22/2008 07/29/2008		
Subject/Description	: Determine pa	st operability for th	ne condition.				
Assignment Com	npletion						
In Progress Notes:	a Notes:       8/22/08 Approved EC 371692 states:         It can be concluded based on the discussion provided above, reasonable evidence exists that the closure plate assemblies for the floor openings between the Safety Valve Room floor and the Auxiliary Feedwater Tunnel would have remained intact following a MSLB event originating in the Safety Valve Room.         Furthermore, the effect of the MSLB event on the closure plates would not have resulted in any significant adverse environmental conditions that would have prevented the AF013 valves from performing their intended design function.         Thus, the results support a best-estimate past-operability determination for the AF013 valves for a postulated Main Steam Line Break.         This item is closed.         Moved date. Analysis continues.         7/15/08-         Due date extended to allow for completion of on going analysis and review by Corp Eng/Bwd/Byron.						

Assign #: 03 AR #: 00789344							
Aff Fac:	Byron	Assign Type:	ACIT	Status:	COMPLETE		
Priority:		Assigned To:		Due Date:	08/07/2008		
Schedule Ref:		Prim Grp:	A8801RAPR	Orig Due Date:	07/22/2008		
Unit Condition:		Sec Grp:					
Assignment Details							
Subject/Description: Determine reportability based on engineering action.							
Assignment Co	mpletion						
In Progress Notes	<ul> <li>Closure: Engineering has concluded the access plate would not have failed during a MSLB and impact the AF013 valves. Consequently, there was no historical Tech Spec violation or any significant safety issue with this condition. Not Reportable.</li> <li>*</li> <li>Update: As of 7/22/08, calcs to support adequacy of design have not been completed yet. Move date out to 7/30/08 to allow engineering to complete calc.</li> </ul>						
Completion Notes:							

Assign #: 04				P	AR #: <u>00789344</u>				
Aff Fac: By	yron	Assign Type:	ACIT	Status:	COMPLETE				
Priority:		Assigned To:		Due Date:	09/29/2009				
Schedule Ref: B1	1R16	Prim Grp:	A8852NESDR	Orig Due Date:	10/10/2008				
Unit Condition:		Sec Grp:							
Assignment Deta	Assignment Details								
Subject/Descriptior	n: B1R16 - Mode documents a the actual space actual space verfication of	e 4 - Verify CEA sp structural analysis acing on the shelf a g is bounded by the this assumption.	acing on U1 AF Tur perfomed by MPR. angle CEAs. This A1 e analysis. AF Tunr	nnel Covers Byron E This analysis used II is to perform veri nel access is require	C# 371692 an assumption for fication that the d to perfom				
Assignment Con	npletion								
In Progress Notes:	09/19/09 - <b>1</b> the number ar	09/19/09 - This ATI is to perform field measurements to verify the number and spacing of CEAs for the Unit 1 AF Tunnel cover shelf angle.							
	EC# 371692, I 1, which conta Tunnel cover a models contain shop drawings assumptions a	Rev. 0 references vendor (MPR) calculation 3101-0025-01, Rev. ains the analysis of three models representing the 16 AF assemblies for Byron/Braidwood Units 1 and 2. The three ned assumptions for the number and spacing of CEAs based on s and photos that were available at the time. These are as follows (Ref. Attachment A, p. A-3):			1, Rev. ed on				
	Model A: 4 and	chors @ 18-inches	on center (with gro	outed opening)					
	Model BC: 4 a	del BC: 4 anchors @ 14.5-inches on center							
	Model D: 4 and	Model D: 4 anchors @ 16.5-inches on center							
	The following a examination a	The following as-built information was collected based on field examination after the AF tunnel was opened for access during B1R16:							
Shelf angl assumptio		elf angle attachments for all 4 Unit 1 AF Tunnel covers are per the sumptions used in calculation 3101-0025-01, Rev. 1.							
	11/17/08 - quarterly to ex rescheduled to *	- PMs for dehumidifiers have been revised from every 18 months (refuel outages). This ATI will be to B1R16.							
	10/10/08 - Reschedule to	- Access to U 11/20/08.	Init 1 has not been	provided yet.					
Completion Notes:									

Assign #: 05 AR #: 007893							
Aff Fac: Byron		Assign Type:	ACIT	Status:	COMPLETE		
Priority:		Assigned To:		Due Date:	10/17/2008		
Schedule Ref:		Prim Grp:	A8852NESDR	Orig Due Date:	10/10/2008		
Unit Condition:		Sec Grp:					
Assignment Deta	ils						
Subject/Description: Verify CEA spacing on U2 AF Tunnel Covers - Byron EC# 371692 documents a sanalysis perfomed by MPR. This analysis used an assumption for the actual spacing the shelf angle CEAs. This ATI is to perform verification that the actual spacing bounded by the analysis. AF Tunnel access is required to perform verification of t assumption.					ments a structural ctual spacing on I spacing is cation of this		
Assignment Com	pletion						
Assignment Completion         In Progress Notes:       10/17/08							
Completion Notes:							

Assign #: 06 AR #: <u>0078934</u> 4							
Aff Fac:	Byron	Assign Type:	ACIT	Status:	COMPLETE		
Priority:		Assigned To:		Due Date:	12/19/2008		
Schedule Ref:		Prim Grp:	A8852NESDR	Orig Due Date:	11/28/2008		
Unit Condition:		Sec Grp:					
Assignment Details							
<b>Subject/Description:</b> Unit 2 AFW Tunnel Cover - Past Operability Determine actions required to resolve differences between model assumptions in EC# 371692 and as-built information.							
Assignment Completion							
<b>In Progress Notes:</b> 12/18/08 - This Action will be tracked under duplicate item 851828-02.							
Completion Notes:							