

3,4 가

A Study of On-Line Maintenance for UCN 3,4

150

3,4 가 Risk Matrix , EDG 가
 , 3,4 Risk Matrix
 AOT Risk Matrix . EDG 가
 / / , AAC
 EDG Overhaul .

Abstract

A Risk Matrix for UCN 3,4 was developed, and a safety change caused by EDG on-line maintenance was studied. The risk criteria used in the Risk Matrix were discussed, and a new Risk Matrix using extended AOTs was introduced. EDG on-line maintenance enhances plant safety by 0.5% in the view point of overall safety considering shutdown/ low power/ full power PSA, and it will become a solution to solve the difficulty in the overhaul schedule caused by losing the AAC replacement mode.

1.

가 , 가 (on-line maintenance)가 .
 가 가 (=) 가
 가 가 가 가
 (Technical Specification) 가 , 가 ,
 Limerick, Byron 20 가 .
 1996 가 가 1,2,3,4 , 3,4
 (ESWS) 가 가 .
 , 가 .
 3,가 가 , , ,
 overhaul , , , 가 가 overhaul
 (EDG) . 2.2 3,4 EDG 가

가 (Out of Service: OOS) 가 Risk Matrix 2.1 가 가 Risk Matrix

2.

2.1 Risk Matrix

Risk Matrix

Risk Matrix 가 Risk Monitor 가 Risk Matrix 가 Risk Monitor Tech. Spec.

가 12 가

(LPSI), (SCS), (CSS), (EDG), (ESW), (CCW), (SIT), (HPSI), (AF/MDP), (AF/TDP), Dump Valve (ECW),

가 가 가 OOS

- (CCW)
 - 16.3.7.3(PSAR) 2 가 가 72 2 가 30
 - 1 2 가
 - 2 3 가
 - Risk Matrix CCW 1 train 1 Out of service LCO 가 (CCWS PP 2A & HX 2A OOS) On-line maintenance가 가
- (ESW)
 - 2 100%
 - 2, 3
 - 1 가
 - Risk Matrix ESW 1 train 1 Out of service LCO 가 (ESWP PP 2A OOS). On-line maintenance가 가
- (ECW)
 - 4 가 가 1 가 가 2 가 가 7 2 가

EDG												
AF/MDP		R						Y				
AF/TDP		R										
Dump Valve												
CCW												
ESW												
ECW												
HPSI		Y										
LPSI												
SIT												
SCS												
CSS												

2. AOT

	EDG	AF/MDP	AF/TDP	Dump Valve	CCW	ESW	ECW	HPSI	LPSI	SIT	SCS	CSS
AOT	3	3	3	3	3	3	3	3	3	1	3	3
AOT	10	3	3	3	7	14	7	3	7	1	7	7

1 가 (CDF) Risk Matrix OOS
 OOS Risk Matrix

2.2 EDG 가

3,4 EDG 가 , 가 overhaul (AAC EDG) 3,4 EDG A, B Overhaul
 AAC Overhaul , EDG 가 가
 EDG 가 / PSA 5,6 , PSA 가 3,4
 “...EDG , EDG POS 6 A POS 8
 EDG POS8 POS 10 B EDG . A
 ...”
 , EDG A 가 , overhaul EDG A 가 ,
 overhaul , overhaul ,

5,6 / PSA POS 3.70E-5/
 8. , 가
 , 가
 5.05E-6/ 8.
 8 , EDG A , EDG B
 , EDG A 가 , 3 CDF가 1.2 %
 . CDF 0.7% 가 , CDF 0.5% .
 , EDG 가 PSA PSA

3. EDG 가

: (CDF)

	/ CDF		CDF		CDF	
Base Case	37 (5.05E-6/)	-	63 (8.60E-6)	-	100(1.365E-5/)	-
EDG A	35.8 (4.88E-6/)	1.2%	63.7 (8.70E-6)	0.7% 가	99.5 (1.358E-5/)	0.5%

3.

3,4 Risk Matrix , on-line maintenance
 . Risk Matrix ,
 AOT AOT Risk Matrix 3,4 Risk Matrix
 AOT Risk Matrix 가 . Risk Matrix
 . ()
 EDG 가 / / , AAC
 EDG Overhaul .

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