

Selection of Safe Shutdown Components for a Fire Hazard Analysis

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Abstract

Fire hazard analysis is to demonstrate the safe shutdown capability for the case of fire in each fire area by selecting safe shutdown components that are required to perform safe shutdown functions including hot shutdown and cold shutdown, and identifying every routings of cables that are required for successful operation of the safe shutdown components. In this study, safe shutdown functions required following a fire are identified, plant systems performing the safe shutdown functions are screened, and finally safe shutdown components are selected by applying appropriate selection criteria to the safe shutdown systems. And, in order to verify completeness of the safe shutdown component list, remote shutdown panel and operating procedures are reviewed and the safe shutdown component list in foreign fire hazard analysis reports are compared. The results of this study indicate that the remote shutdown panels have to be improved in the viewpoint of fire safety by installing additional indicators and controllers for an assurance of the safe shutdown. And the safe shutdown component list is reviewed to be compatible with the list in foreign fire hazard analysis reports.

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SRP 9.5-1

SRP 9.5-1

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(Reactor Shutdown)

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(Inventory Control)

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tank) 가 가

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(Primary makeup water storage
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(Pressure Control)

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1 가

(Decay Heat Removal)

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(Process Monitoring)

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(Support Functions)

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(Decay Heat Removal)

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(Process Monitoring)

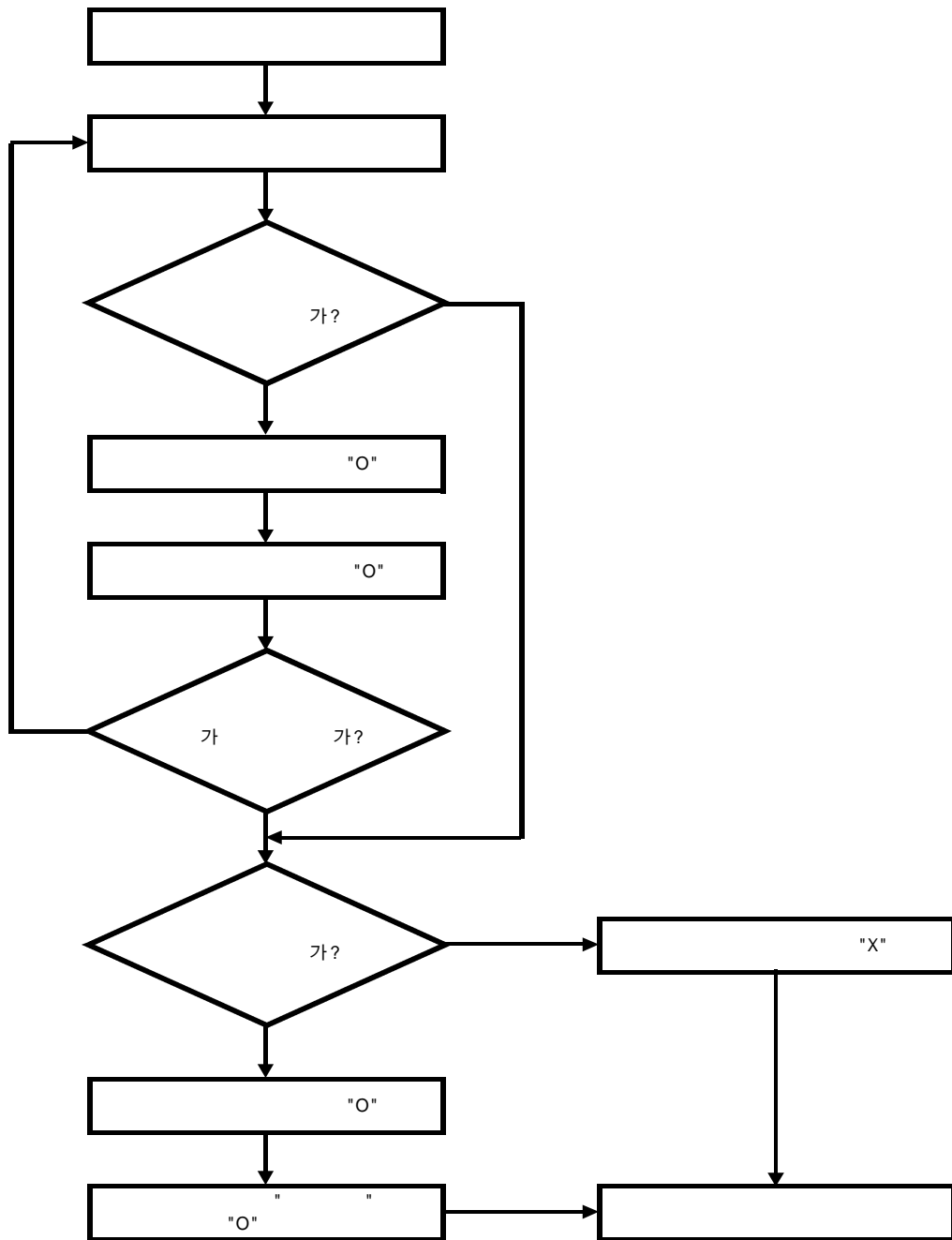
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(Support Functions)



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- 가 / 가
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- 가
- 가 (IN84-09).
- 가 (Pressurizer pressure and level)
- (Reactor coolant hot leg temperature or exit thermocouples, and cold leg temperature)
- (Steam generator pressure and level(wide range))
- (Source range flux monitor)
- (Diagnostic instrumentation for shutdown systems)
- (Level indication for all tanks used)

- (Passive equipment) : 가
- 가 (Conduit) 가
- (Safety valve) :
- (Instrument root valve) :

- (Steam trap) :
- (Temporary equipment) :
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- Space heater
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RC	Reactor Coolant System		o	o		o		
CS	Chemical and Volume Control System	o	o	o		o		
SI	Safety Injection System		o		o	o		
RH	Residual Heat Removal System				o	o		
CC	Component Cooling System - Essential					o	o	
CC	Component Cooling System - Non Essential					o	o	
RF	Refueling Water Storage & Heat System		o			o		
PM	Primary Makeup Water System		o					
VU	Auxiliary Building Chilled Water						o	
DF	Fuel Oil System for Aux. Boiler and Emergency DG						o	
VV	Containment Recirculation System - VV						o	
VM	TPCZ Supply System - VM						o	
VE	TPCZ Return Air System - VE						o	
VL	Battery Room & Locker Room Ventilation System - VL						o	
EE	DG Lube Oil & Radiator Cooled System						o	
MS	Main Reheat and Turbine Bypass Steam System				o	o		
FE	Auxiliary Feed Water System				o	o		
CD	Condensate System				o			
CW	Circulating Water, Screen Wash						o	
SW	Component Cooling Sea Water System						o	
IA	IA/SA Compressor Flow Diagram(Aux. Bldg)						o	
FP	Fire Service System						o	

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(RSP:

Remote Shutdown Panel)

가. RSP

TMI

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(Hot Shutdown)

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Train A/B

(Level 20')

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94 RSP

A (XPN-904) 22 , B (XPN-905) 19 , 41 가

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(MD TD)

RSP

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A (XPN-904) 4 , B (XPN-905) 5 , 9 가 가

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94 RSP

A (XPN-904) 34 , B (XPN-905) 28 , 62 /

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AHU

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(MD)

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(MD TD)

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(MD TD)

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RSP
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A (XPN-904) 34 , B (XPN-905) 26 , 60 / 가

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PORV

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- Accumulator

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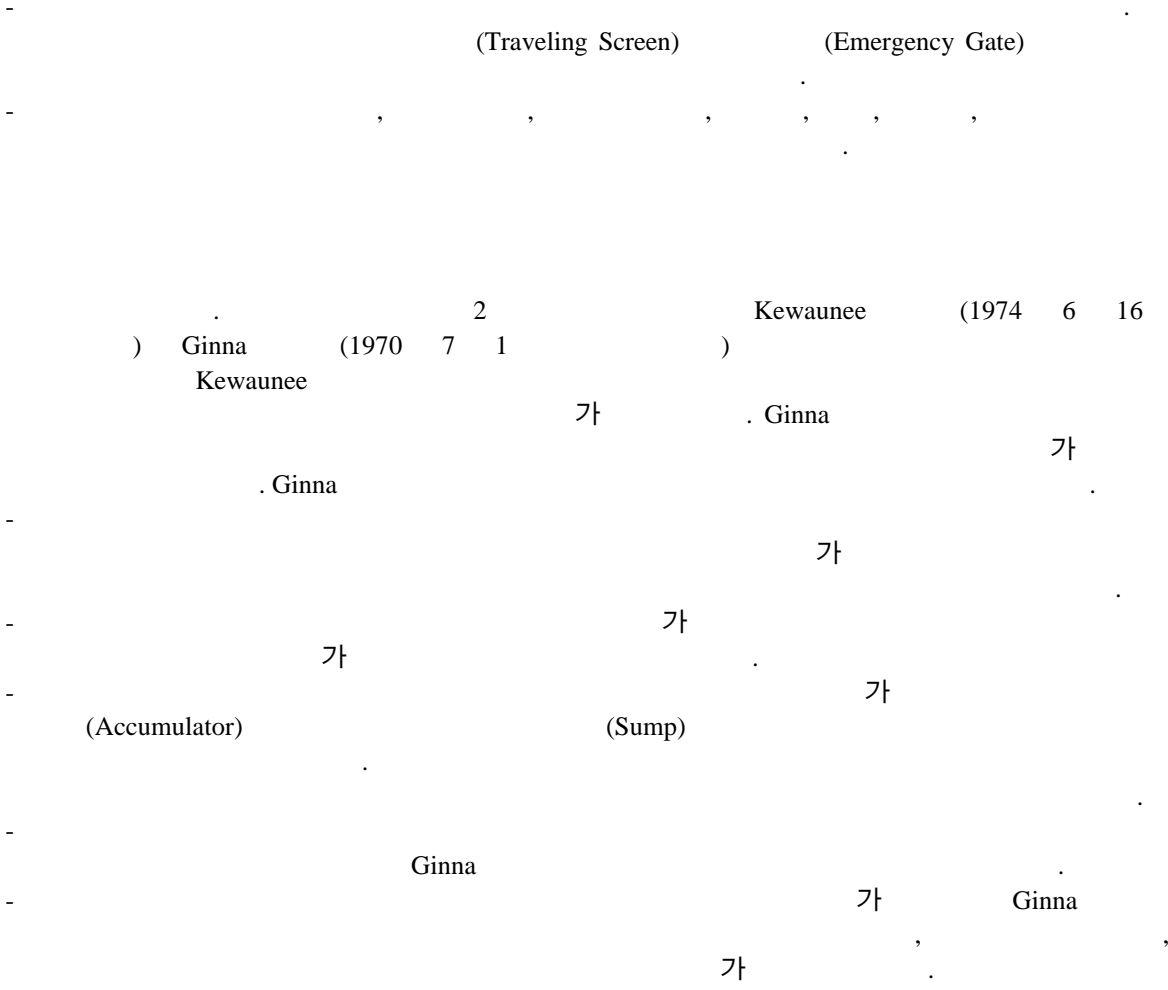
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