

UPDATED FSAR

ACCIDENT ANALYSES **CHAPTER 15 FIGURES** 26

LIST OF FIGURES

Figure Number	Тітle
FIGURE 15-1	PLANT SAFETY ANALYSIS METHOD FOR IDENTIFYING AND EVALUATING
FIGURE 15-2	PLANT SAFETY ANALYSIS METHOD FOR IDENTIFYING AND EVALUATING
TIGURE 13-2	Accidents
FIGURE 15-3	Loss of 100 Degree Feedwater Heating Manual Flow Control,
FIGURE 15-4	DELETED IN REVISION 21
FIGURE 15-5	FEEDWATER CONTROLLER FAILURE MAXIMUM DEMAND (EOC), UNIT 1- CYCLE 22
FIGURE 15-6	DELETED IN REVISION 22.
FIGURE 15-7	FEEDWATER CONTROLLER FAILURE MAXIMUM DEMAND (EOC), UNIT 2 – CYCLE 23
FIGURE 15-8	DELETED IN REVISION 22.
FIGURE 15-9	DELETED IN REVISION 22.
FIGURE 15-10	FEEDWATER CONTROLLER FAILURE WITH TBPOOS, ICF, AND NFWT, UNIT 2 - CURRENT CYCLE (EOC 23)
FIGURE 15-11	INADVERTENT HPCI ACTIVATION, UNIT 1 – CYCLE 9 (BOC9 TO EOC9)
FIGURE 15-12	INADVERTENT HPCI ACTIVATION, UNIT 2 - CYCLE 10
FIGURE 15-13	PRESSURE REGULATOR FAILURE (OPEN), UNIT 1 – CYCLE 1
FIGURE 15-14	PRESSURE REGULATOR FAILURE (OPEN), UNIT 2 – CYCLE 1
FIGURE 15-15	INADVERTENT OPENING OF A RELIEF OR SAFETY VALVE, UNIT 2 – CYCLE 1
FIGURE 15-16	GENERATOR LOAD REJECTION WITH 25 PERCENT BYPASS, UNIT 1 – CYCLE 1
FIGURE 15-17	GENERATOR LOAD REJECTION NO BYPASS WITH ICF, UNIT 1 – CURRENT CYCLE (EOC 22)
FIGURE 15-18	GENERATOR LOAD REJECTION, NO BYPASS, WITH ICF, UNIT 2 - (EOC 23)
FIGURE 15-19	TURBINE TRIP WITH 25 PERCENT BYPASS, UNIT 1 – CYCLE 1
FIGURE 15-20	TURBINE TRIP WITHOUT BYPASS WITH ICF, UNIT 1 – CURRENT CYCLE (EOC 22)
FIGURE 15-21	TURBINE TRIP WITHOUT BYPASS, WITH ICF, UNIT 2 (EOC 23)
FIGURE 15-22	DELETED IN REVISION 22.
FIGURE 15-23	DELETED IN REVISION 22.
FIGURE 15-24	CLOSURE OF ALL MSIV FLUX SCRAM, UNIT 1 – CURRENT CYCLE (CYCLE 22)
FIGURE 15-25	CLOSURE OF ALL MSIV FLUX SCRAM, UNIT 2 – (CYCLE 23)
FIGURE 15-26	EXTENDED POWER UPRATE MSIV CLOSURE WITH FLUX SCRAM (102 PERCENT INITIAL POWER)
FIGURE 15-27	UNIT 2 – CYCLE 1 LOSS OF AUXILIARY POWER (TRANSFORMER) WITH 25 PERCENT BYPASS
FIGURE 15-28	UNIT 2 - CYCLE 1 LOSS OF AUXILIARY POWER (ALL GRID CONNECTIONS) WITH 25 PERCENT BYPASS
FIGURE 15-29	UNIT 1 – CYCLE 1 LOSS OF FEEDWATER FLOW
FIGURE 15-30	UNIT 2 – CYCLE 1 LOSS OF FEEDWATER FLOW
FIGURE 15-31	WATER LEVEL RESPONSE WITH REACTOR CORE ISOLATION COOLING FOR LOSS OF FEEDWATER FLOW EVENT AT ORIGINAL POWER



UPDATED FSAR

ACCIDENT ANALYSES **CHAPTER 15 FIGURES**

26 15 2 of 2

LIST OF FIGURES

FIGURE	
NUMBER	TITLE
FIGURE 15-32	PRESSURE RESPONSE WITH REACTOR CORE ISOLATION COOLING FOR LOSS
	OF FEEDWATER FLOW EVENT AT ORIGINAL POWER
FIGURE 15-33	UNIT 2 – CYCLE 1 TRIP OF ONE RECIRCULATION PUMP
FIGURE 15-34	UNIT 1 – CYCLE 1 TRIP OF TWO RECIRCULATION PUMPS
FIGURE 15-35	UNIT 2 – CYCLE 1 TRIP OF BOTH RECIRCULATION PUMPS
FIGURE 15-36	UNIT 1 – CYCLE 1 SEIZURE OF ONE RECIRCULATION PUMP
FIGURE 15-37	UNIT 2 - CYCLE 1 SEIZURE OF ONE RECIRCULATION PUMP
FIGURE 15-38	SEIZURE OF OPERATING RECIRCULATION PUMP SINGLE LOOP OPERATION
FIGURE 15-39	UNIT 2 – CYCLE 1 ABNORMAL STARTUP OF IDLE RECIRCULATION PUMP
FIGURE 15-40	UNIT 1 – CYCLE 1 ABNORMAL STARTUP OF IDLE RECIRCULATION PUMP
FIGURE 15-41	UNIT 1 – CYCLE 1 RECIRCULATION FLOW CONTROL FAILURE – INCREASING
	FLOW
FIGURE 15-42	UNIT 2 – CYCLE 1 RECIRCULATION FLOW CONTROL FAILURE – INCREASING
	FLOW
FIGURE 15-43	UNIT 2 – CYCLE 1 MAXIMUM ROD WORTH VERSUS POWER LEVEL
FIGURE 15-44	UNIT 2 – CYCLE 1 ROD DROP ACCIDENT (POWER RANGE) PEAK FUEL
	ENTHALPY
FIGURE 15-45	MAIN STEAM LINE BREAK ACCIDENT BREAK LOCATION



PLANT SAFETY ANALYSIS METHOD FOR IDENTIFYING AND EVALUATING ABNORMAL OPERATIONAL TRANSIENTS





UPDATED FSAR

ACCIDENT ANALYSES **CHAPTER 15 FIGURES**

PLANT SAFETY ANALYSIS METHOD FOR IDENTIFYING AND EVALUATING ACCIDENTS





LOSS OF 100 DEGREE FEEDWATER HEATING, MANUAL FLOW CONTROL, UNIT 2 – CYCLE 7





UPDATED FSAR ACCIDENT ANALYSES CHAPTER 15 FIGURES

FEEDWATER CONTROLLER FAILURE, MAXIMUM DEMAND (EOC-2205 MWD/MT), UNIT 1 – CYCLE 8

DELETED



UPDATED FSAR

ACCIDENT ANALYSES CHAPTER 15 FIGURES

FEEDWATER CONTROLLER FAILURE, MAXIMUM DEMAND (EOC), UNIT 1 - CYCLE 22





10/20/17 05:33:07 NGS=78947, JOB D=27625

BRK1 CY22 FWCF 100P104.5F 19100.1X HBB TSSS Nom P -10psi FWT -10F PAM 10/20/17 =78947, JOB D=27625 05:3307 NO





BRK1 CY22 FWCF 100P104.5F 19100.1X HBB TSSS Nom P -10psi FWT -10F PAM 10/20/17 NGS-78947, JOB D-27625 05:33:07

BRK1 CY22 FWCF 100P104.5F 19100.1X HBB TSSS Nom P -10psi FWT -10F PAM 10/20/17 05:33:07 NQS=78947, JOB D=27625



FEEDWATER CONTROLLER FAILURE, MAXIMUM DEMAND (EOC), UNIT 2 - CYCLE 23





UPDATED FSAR ACCIDENT ANALYSES

CHAPTER 15 FIGURES

Revision[.] 26 0 1

1101131011.	2
Figure:	15-1
Page:	1 of

FEEDWATER CONTROLLER FAILURE WITH TBPOOS, ICF, AND NFWT, UNIT 2 - CURRENT CYCLE (EOC 23)





UPDATED FSAR

Accident Analyses Chapter 15 Figures
 Revision:
 24

 Figure:
 15-11

 Page:
 1 of 1

INADVERTENT HPCI ACTIVATION, UNIT 1 – CYCLE 9 (BOC9 TO EOC9)





CHAPTER 15 FIGURES

24

INADVERTENT HPCI ACTIVATION, UNIT 2 - CYCLE 10



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-13
	CHAPTER 15 FIGURES	Page:	1 of 1

PRESSURE REGULATOR FAILURE (OPEN), UNIT 1 – CYCLE 1



UPDATED FSAR	Revision:	24
ACCIDENT ANALYSES	Figure:	15-14
CHAPTER 15 FIGURES	Page:	1 of 1

PRESSURE REGULATOR FAILURE (OPEN), UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-15
	CHAPTER 15 FIGURES	Page:	1 of 1

INADVERTENT OPENING OF A RELIEF OR SAFETY VALVE, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure:	15-16
	CHAPTER 15 FIGURES	Page:	1 of 1

GENERATOR LOAD REJECTION WITH 25 PERCENT BYPASS, UNIT 1 – CYCLE 1





GENERATOR LOAD REJECTION, NO BYPASS, WITH ICF, UNIT 1 – CURRENT CYCLE (EOC 22)











BRK1 CY22 LRNB 100P104.5F 19100.1X HBB TSSS Nom P -10psi Nom FWT PAM 19/20/17 052716 NGS-76942, 308 D=27501

BRK1 СҮ22 LRNB 100P104.5F 19100.1X HBB TSSS Nom P —10psi Nom FWT PAM 19/26/17 сез716 Ноз-тенд зов р-с7801



UPDATED FSAR ACCIDENT ANALYSES

CHAPTER 15 FIGURES

Revision: 26 15-18 1 of 1

Figure: Page:

GENERATOR LOAD REJECTION, NO BYPASS, WITH ICF, UNIT 2 -CURRENT CYCLE (EOC 23)



11/05/16

11/05/16 17:43:29 NQS=31532, JOB 10=25506

17:43:29 NQS=31532, JOB D

	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure:	15-19
	CHAPTER 15 FIGURES	Page:	1 of 1

TURBINE TRIP WITH 25 PERCENT BYPASS, UNIT 1 – CYCLE 1





UPDATED FSAR ACCIDENT ANALYSES **CHAPTER 15 FIGURES**

Revision: Figure: Page:

TURBINE TRIP WITHOUT BYPASS, WITH ICF, UNIT 1 – CURRENT CYCLE (EOC 22)







BRK1 CY22 TTNB 100P104.5F 19100.1X HBB TSSS Nom P -10psi Nom FWT PAM BRK1 CY22 TTNB 100P104.5F 19100.1X HBB TSSS Nom P -10psi Nom FWT PAM 10/20/17 78944, JOB ID=15847 10/20/17 NQS-78944, JOB ID-15847



UPDATED FSAR ACCIDENT ANALYSES CHAPTER 15 FIGURES

Revision: 26 Figure: 15-21 Page: 1 of 1

TURBINE TRIP WITHOUT BYPASS, WITH ICF, UNIT 2 - CURRENT CYCLE (EOC 23)



11/05/16 NQS=31553, JOB (D=21345



UPDATED FSAR ACCIDENT ANALYSES

Revision:26Figure:15-24Page:1 of 1

CHAPTER 15 FIGURES

CLOSURE OF ALL MSIV, FLUX SCRAM, UNIT 1 – CURRENT CYCLE (CYCLE 22)





UPDATED FSAR

Accident Analyses Chapter 15 Figures

CLOSURE OF ALL MSIV, FLUX SCRAM, UNIT 2 – CYCLE 23





EXTENDED POWER UPRATE MSIV CLOSURE WITH FLUX SCRAM (102 PERCENT INITIAL POWER)



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-27
	CHAPTER 15 FIGURES	Page:	1 of 1

LOSS OF AUXILIARY POWER (TRANSFORMER) WITH 25 PERCENT BYPASS, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
	Accident Analyses	Figure:	15-28
	CHAPTER 15 FIGURES	Page:	1 of 1

LOSS OF AUXILIARY POWER (ALL GRID CONNECTIONS)

WITH 25 PERCENT BYPASS, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
ENERGY	ACCIDENT ANALYSES	Figure:	15-29
	CHAPTER 15 FIGURES	Page:	1 of 1

LOSS OF FEEDWATER FLOW, UNIT 1 – CYCLE 1





UPDATED FSAR

Accident Analyses Chapter 15 Figures

LOSS OF FEEDWATER FLOW, UNIT 2 - CYCLE 1



	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure:	15-31
	CHAPTER 15 FIGURES	Page:	1 of 1

WATER LEVEL RESPONSE WITH REACTOR CORE ISOLATION COOLING FOR LOSS OF FEEDWATER FLOW EVENT AT ORIGINAL POWER



TIME (mc)

	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure:	15-32
	CHAPTER 15 FIGURES	Page:	1 of 1

PRESSURE RESPONSE WITH REACTOR CORE ISOLATION COOLING FOR LOSS OF FEEDWATER FLOW EVENT AT ORIGINAL POWER



TIME (sec)

	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure: Page:	15-33 1 of 1

TRIP OF ONE RECIRCULATION PUMP, UNIT 2 - CYCLE 1



	UPDATED FSAR	Revision:	24
ENERGY	ACCIDENT ANALYSES	Figure:	15-34
	CHAPTER 15 FIGURES	Page:	1 of 1

TRIP OF BOTH RECIRCULATION PUMPS, UNIT 1 – CYCLE 1





	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure: Page:	15-35 1 of 1

TRIP OF BOTH RECIRCULATION PUMPS, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-36
	CHAPTER 15 FIGURES	Page:	1 of 1

SEIZURE OF ONE RECIRCULATION PUMP, UNIT 1 - CYCLE 1





	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure:	15-37
	CHAPTER 15 FIGURES	Page:	1 of 1

SEIZURE OF ONE RECIRCULATION PUMP, UNIT 2 - CYCLE 1





CHAPTER 15 FIGURES

SEIZURE OF OPERATING RECIRCULATION PUMP SINGLE LOOP OPERATION



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-39
	CHAPTER 15 FIGURES	Page:	1 of 1

ABNORMAL STARTUP OF IDLE RECIRCULATION PUMP, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-40
	CHAPTER 15 FIGURES	Page:	1 of 1

ABNORMAL STARTUP OF IDLE RECIRCULATION PUMP, UNIT 1 – CYCLE 1



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-41
	CHAPTER 15 FIGURES	Page:	1 of 1

RECIRCULATION FLOW CONTROL FAILURE - INCREASING FLOW, UNIT 1 – CYCLE 1



	UPDATED FSAR	Revision:	24
ENERGY.	ACCIDENT ANALYSES	Figure: Page:	15-42 1 of 1

RECIRCULATION FLOW CONTROL FAILURE - INCREASING FLOW, UNIT 2 – CYCLE 1



	UPDATED FSAR	Revision:	24
	ACCIDENT ANALYSES	Figure:	15-43
	CHAPTER 15 FIGURES	Page:	1 of 1

MAXIMUM ROD WORTH VERSUS POWER LEVEL, UNIT 2 – CYCLE 1





24

ROD DROP ACCIDENT (POWER RANGE) PEAK FUEL ENTHALPY, UNIT 2 - CYCLE 1





MAIN STEAM LINE BREAK ACCIDENT BREAK LOCATION

