OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION: SALEM

SYSTEM: Administrative – Conduct of Operations

TASK: Determine which ECCS pumps can be stopped to maintain minimum injection flow IAW 2-EOP-LOCA-5, Figure A

TASK NUMBER: 1150680502

JPM NUMBER: 17-01 NRC SRO-A1

ALTERNATE PATH: [ ]

K/A NUMBER: G 2.1.7

IMPORTANCE FACTOR: RO ____ SRO 4.7

APPLICABILITY:
EO [ ] RO [ ] STA [X] SRO [X]

EVALUATION SETTING/METHOD: Classroom / Simulate

REFERENCES: 2-EOP-LOCA-5, Rev. 31 (checked 9-4-18)

TOOLS AND EQUIPMENT: None

VALIDATED JPM COMPLETION TIME: 5 minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

Developed By: R. Chan Rudolph Chan **Date:** 9-4-18
Instructor

Validated By: R. Lawrence RLawrence JBates **Date:** 9/6/18
SME or Instructor

Approved By: McHugh **Date:** 10/30/18
Training Department

Approved By: MEHS **Date:** 10.23.18
Operations Department

ACTUAL JPM COMPLETION TIME:

ACTUAL TIME CRITICAL COMPLETION TIME:

PERFORMED BY:

GRADE: [ ] SAT [ ] UNSAT

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: **DATE:**

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

REVISION HISTORY

JPM NUMBER: 17-01 NRC SRO-A1

Rev #	Date	Description	Validation Required
00	9-4-18	**This is a NEW JPM**. Added revision history and simulator setup pages. Editorial comments from IP 71111.11 FASA.	Yes

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Administrative – Conduct of Operations

TASK: Determine which ECCS pumps can be stopped to maintain minimum injection flow IAW 2-EOP-LOCA-5, Figure A

TASK NUMBER: 1150680502

INITIAL CONDITIONS:

- At 0500 Salem 2 reactor was manually tripped and Safety Injection automatically actuated as a result of a small break LOCA
- 21 RHR pump was C/T for maintenance and 22 RHR pump tripped while in 2-EOP-LOCA-1
- The crew has transitioned to 2-EOP-LOCA-5 due to no recirculation capability.
- The crew is performing the major action steps (minimum SI flow for decay heat removal) of 2-EOP-LOCA-5
- The following ECCS pumps are running:
  - 21 SI pump with indicated flow of 420 gpm
  - 22 Charging pump with indicated flow of 360 gpm

INITIATING CUE:

- You are the Unit 2 CRS at Step 19.2 of 2-EOP-LOCA-5.
- **DETERMINE** the following:
  1. At time 0550 hours, what is the minimum SI flow required from Figure A (attached)?
  2. Which ECCS pumps can be stopped (if any) to reduce injection flow as close as possible to minimum flow from Figure A (assume that ECCS pump flows remains stable)?

Successful Completion Criteria:

1. All critical steps completed.
2. All sequential steps completed in order.
3. All time-critical steps completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Task Standard for Successful Completion:

1. **Min flow injection of 390 gpm (+/- 10 gpm)**
2. **Stops 22 Charging pump**

OPERATOR TRAINING PROGRAM NAME: _____

JOB PERFORMANCE MEASURE DATE: _____

SYSTEM: Generic Administrative – Conduct of Operations

TASK: Determine which ECCS pumps can be stopped to maintain minimum injection flow IAW 2-EOP-LOCA-5, Figure A

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE	**PROVIDE** the operator a copy of 2-EOP-LOCA-5 Sheet 2. Figure A is also attached with CUE SHEET.			
	CUE:	**PROVIDE** the operator the initiating cue AND **ENTER** START TIME AFTER operator repeats back the Initiating Cue. **START TIME:**_____			
*	19.1	Determine the minimum SI flow required from Figure A	**Using Figure A and a time after reactor trip of 50 minutes, SRO determines a minimum SI flow of 390 gpm (+/- 10 gpm)**		
*	19.2	Start or stop RHR, SI and Charging pumps to obtain injection flow as close as possible, but not less than the value determined from Figure A.	**Using the given ECCS flow rates, the SRO determines the following:** ▪ **21 SI pump (420 gpm) must remain in service, and** ▪ **22 Charging pump (360 gpm) can be stopped** **JPM is complete**		

OPERATOR TRAINING PROGRAM NAME: _____

JOB PERFORMANCE MEASURE DATE: _____

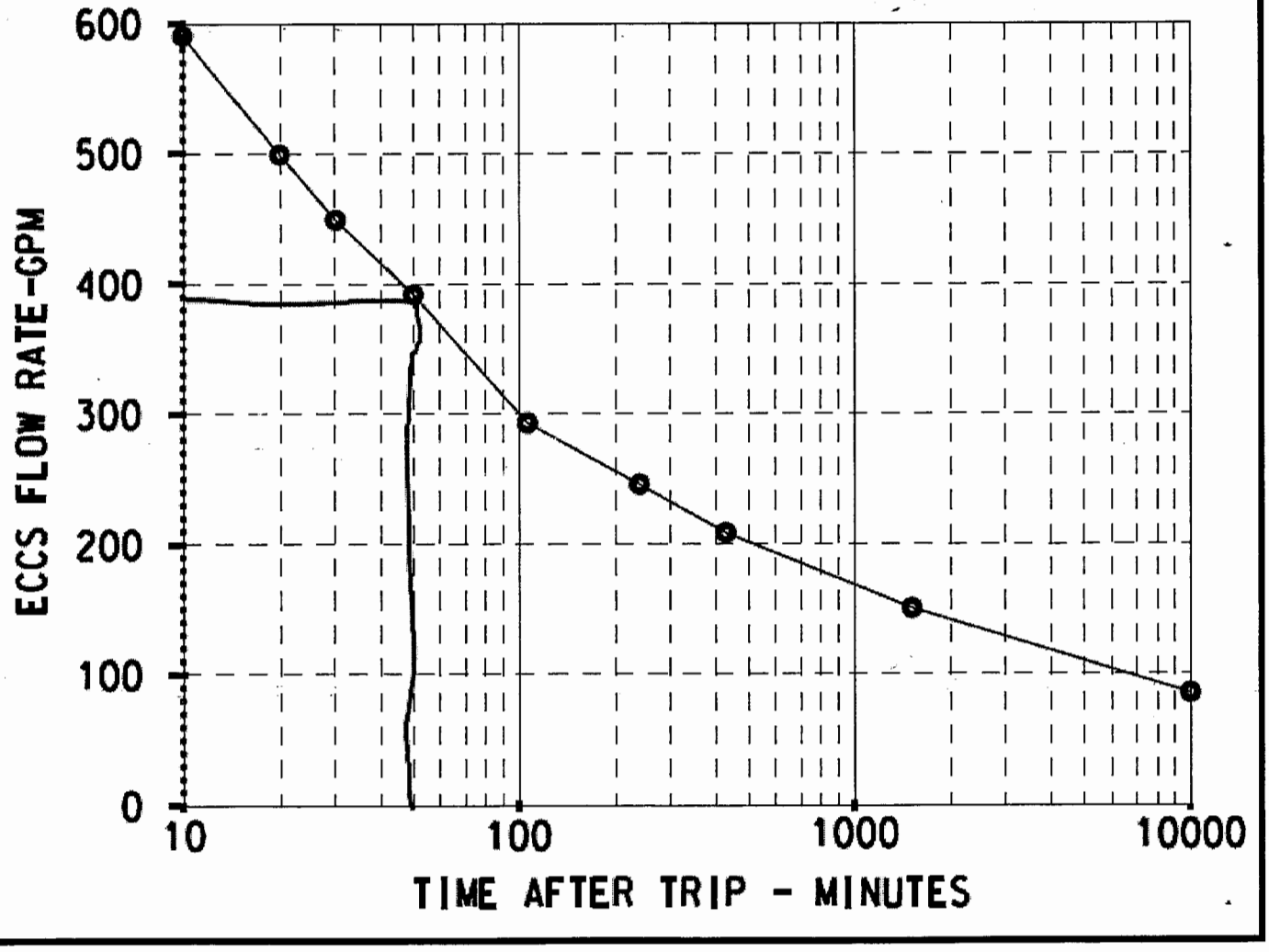
SYSTEM: Generic Administrative – Conduct of Operations

TASK: Determine which ECCS pumps can be stopped to maintain minimum injection flow IAW 2-EOP-LOCA-5, Figure A

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE:	WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN **RECORD** the STOP TIME. **STOP TIME:**_____	**Terminate JPM after SRO reports which ECCS pumps can be stopped.**		

FIGURE A

MINIMUM ECCS FLOW VERSUS TIME AFTER TRIP



JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

JPM#: 17-01 NRC SRO-A1

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 and 11 below.

R 1. Task description and number, JPM description and number are identified.

R 2. Knowledge and Abilities (K/A) references are included.

R 3. Performance location specified. (in-plant, control room, or simulator)

R 4. Initial setup conditions are identified.

R 5. Initiating and terminating Cues are properly identified.

R 6. Task standards identified and verified by SME review.

R 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).

R 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. 31 Date 9-6-18
2-EOP-LOCA-5

C 9. Pilot test the JPM:
a. verify Cues both verbal and visual are free of conflict, and
b. ensure performance time is accurate.

NA 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.

NA 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor: R. Chan Rudolph Chan Date: 9-6-18

SME/Instructor: R Lawrence J Bates Date: 9/6/18

SME/Instructor: _____ Date: _____

INITIAL CONDITIONS:

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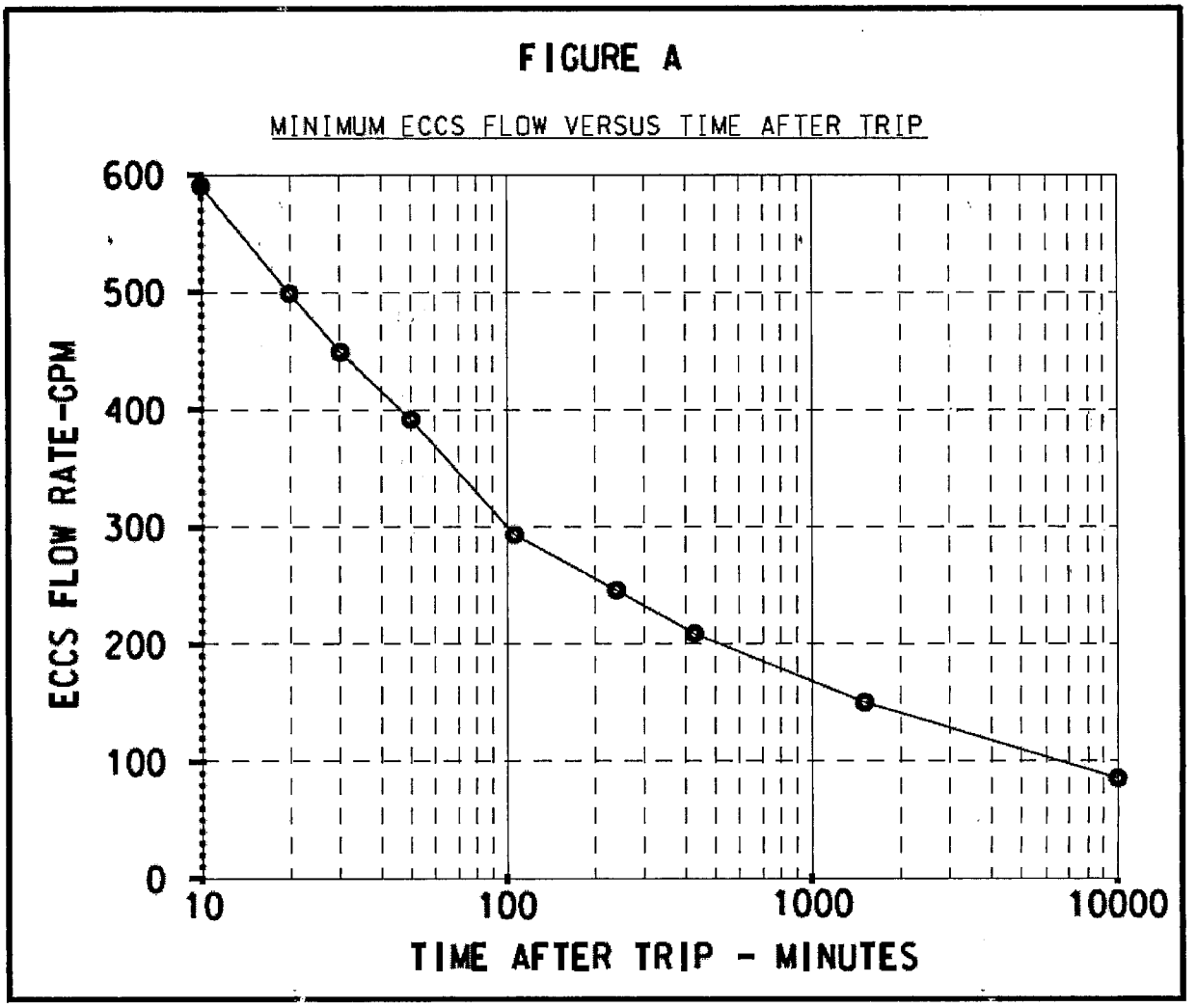
FIGURE A
MINIMUM ECCS FLOW VERSUS TIME AFTER TRIP
ECCS FLOW RATE-GPM
600
500
400
300
200
100
0
10
100
1000
10000
TIME AFTER TRIP - MINUTES