BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of	:	
	:	Docket Nos. 50-277
PHILADELPHIA ELECTRIC COMPANY	:	50-278

APPLICATION FOR AMENDMENT

OF

FACILITY OPERATING LICENSES

DPR-44 & DPR-56

Edward G. Bauer, Jr.
Eugene J. Bradley

2301 Market Street
Philadelphia, Pennsylvania 19101

Attorneys for
Philadelphia Electric Company

BEFORE THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of	:	
	:	Docket Nos. 50-277
PHILADELPHIA ELECTRIC COMPANY	:	50-278

APPLICATION FOR AMENDMENT

OF

FACILITY OPERATING LICENSES

DPR-44 & DPR-56

Philadelphia Electric Company, Licensee under Facility Operating Licenses DPR-44 and DPR-56 for Peach Bottom Atomic Power Station Unit Nos. 2 and 3 respectively, hereby requests that the Technical Specifications incorporated in Appendix A of the Operating Licenses be amended by revising certain sections as described below.

2012 069

Change I - Spent Fuel Discharge Rates

The Licensee proposes revisions to Technical Specification, section 3.10.E, that change the limiting conditions for the discharge of spent fuel from the reactor vessel to the Spent Fuel Pool. The revised limits would permit a spent fuel discharge rate based on the elapsed time following the reactor shutdown, the quantity of fuel to be discharged, river water temperature, and the discharge cycle (number). A description of the safety analysis is included in section 3.10.E BASES on page 230a. The safety analysis, using data and assumptions previously submitted on January 19, 1978, in support of the installation of high density racks in the Peach Bottom spent fuel pools, was performed to develop the maximum permissible discharge rates shown in the proposed figures 3.10.E.1 through 9.

The changes are indicated by the vertical bar in the margin of the attached revised pages ii, 228, and by adding pages 228a through 228j and 230a.

Change II - Control Rod Drive System

In a letter dated October 21, 1977, concerning Peach Bottom Atomic Power Station Unit 3 Control Rod Drive (CRD) system operation, the Division of Operating Reactors, inter alia, requested that the Philadelphia Electric Company submit proposed plans for permanent modification of the Unit 3 CRD system. The modification would eliminate the CRD return line to the reactor vessel. On January 5, 1978, Philadelphia Electric Company submitted proposed plans to cut and cap the CRD return line which included removal of the two check valves. At this time the Philadelphia Electric Company additionally proposes to provide an alternate CRD return path by re-routing the return to the Reactor Water Cleanup System return line between the inboard and outboard isolation valves. The new CRD return line will be provided with a locked closed manual outboard isolation valve as permitted by 10 CFR 50, Appendix A, Criterion 55, paragraph 2. Inboard isolation is provided by the existing isolation check valve on the feedwater supply line. Accordingly, the Licensee requests that Table 3.7.1 of the Technical Specifications be revised as indicated by the vertical bar in the margin of attached page 180 to include these valves as primary containment isolation valves.

Due to recommendations from the General Electric Company that the stagnant CRD return line be removed as soon as practicable, it is planned to cut and cap the CRD return line on Unit 3 during the Fall 1979 refueling outage. Due to long design and material lead times, the rerouting of the CRD return line cannot be properly implemented during this Unit 3 refueling outage. The Licensee concurs with the General Electric Company's engineering position, as stated in the March 19, 1979, letter from General Electric Company to the NRC concerning Control Rod Drive Return Line Removal, that the capability of the CRD system to provide water to the reactor vessel is not significantly affected by removal of the CRD return line. However, the Licensee intends to expedite the rerouting of the CRD return line as soon as practicable to be implemented no later than the end of the next scheduled Unit 3 refueling outage. The Unit 2 entire modification is planned for Spring 1980 during the refueling outage.

Since the proposed changes to the Technical Specification do not involve a significant hazards consideration, pursuant to 10 CFR 170.22, Philadelphia Electric Company, for fee purposes, proposes that the Application for Amendment for Unit No. 2 be considered a Class III Amendment and that the Application for Amendment for Unit 3 be considered a Class I Amendment.

The Plant Operation Review Committee and the Operation and Safety Review Committee have reviewed these proposed changes to the Technical Specifications and have concluded that they do not involve an unreviewed safety question, or a significant hazards consideration and will not endanger the health and safety of the public.

Respectfully submitted,

PHILADELPHIA ELECTRIC COMPANY

By ______________________
Vice President

COMMONWEALTH OF PENNSYLVANIA :
ss.
COUNTY OF PHILADELPHIA :

S. L. Daltroff, being first duly sworn, deposes and says:

That he is Vice President of Philadelphia Electric Company, the Applicant herein; that he has read the foregoing Application for Amendment of Facility Operating Licenses and knows the contents thereof; and that the statements and matters set forth therein are true and correct to the best of his knowledge, information and belief.

S L Daltroff

Subscribed and sworn to
before me this 23RD day
of August, 1979

Elizabeth H. Boyer
Notary Public
ELIZABETH H. BOYER
Notary Public, Phila., Phila. Co.
My Commission Expires Jan. 30, 1982

2012 073

CERTIFICATE OF SERVICE

I certify that service of the foregoing Application was made upon the Board of Supervisors, Peach Bottom Township, York County, Pennsylvania, by mailing a copy thereof, via first-class mail, to Albert R. Steele, Chairman of the Board of Supervisors, R. D. No. 1, Delta, Pennsylvania 17314; upon the Board of Supervisors, Fulton Township, Lancaster County, Pennsylvania, by mailing a copy thereof, via first-class mail, to George K. Brinton, Chairman of the Board of Supervisors, Peach Bottom, Pennsylvania 17563; and upon the Board of Supervisors, Drumore Township, Lancaster County, Pennsylvania, by mailing a copy thereof, via first-class mail, to Wilmer P. Bolton, Chairman of the Board of Supervisors, R. D. No. 1, Holtwood, Pennsylvania 17532; all this 27th day of August, 1979.

Eugene J. Bradley

Attorney for
Philadelphia Electric Company

2012 074

POOR ORIGINAL

2012 075

LIMITING CONDITION FOR OPERATION

3.10.B (Cont'd)

1. The SRM shall be inserted to the normal operating level. (Use of special moveable, dunking type detectors during initial fuel loading and major core alterations in place of normal detectors is permissible as long as the detector is connected to the normal (SRM circuit).

2. The SRM shall have a minimum of 3 cps with all rods fully inserted in the core.
in the core.

C. Spent Fuel Pool Water Level

Whenever irradiated fuel is stored in the spent fuel pool, water level shall be maintained at or above 8 1/2' above the top of the fuel.

D. Heavy Loads Over Spent Fuel

Loads in excess of 1000 lbs (excluding the rigging and transport vehicle) shall be prohibited from travel over fuel assemblies in the spent fuel storage pool.

E. Spent Fuel Discharge Rates

In order to maintain SFP temperature less than or equal to 150°F, the rate of discharge of spent fuel assemblies from the reactor to the spent fuel pool shall not exceed the maximum permissible discharge rate obtained from Figures 3.10.E.1 through 9, whenever the spent fuel pool cooling system is in use. No limitataions are required whenever the Residual Heat Removal System is arranged for spent fuel pool cooling.

SURVEILLANCE REQUIREMENTS

4.10.B (Cont'd.)

C. Spent Fuel Pool Water Level

Whenever irradiated fuel is stored in the spent fuel pool, the water level shall be recorded daily.

E. Spent Fuel Discharge Rates

Whenever spent fuel is being discharged, the following items shall be recorded: a) the discharge (cycle) number, b) the number of fuel assemblies to be discharged, c) the time from reactor shutdown to first fuel assembly discharged, in hours, d) the temperature of the river water shall be determined at least at the beginning of the discharge and once per day thereafter (if it is desired to correct the maximum permissible discharge rate for the effect of the temperature of the cooling (river) water for the SFP heat exchanger).

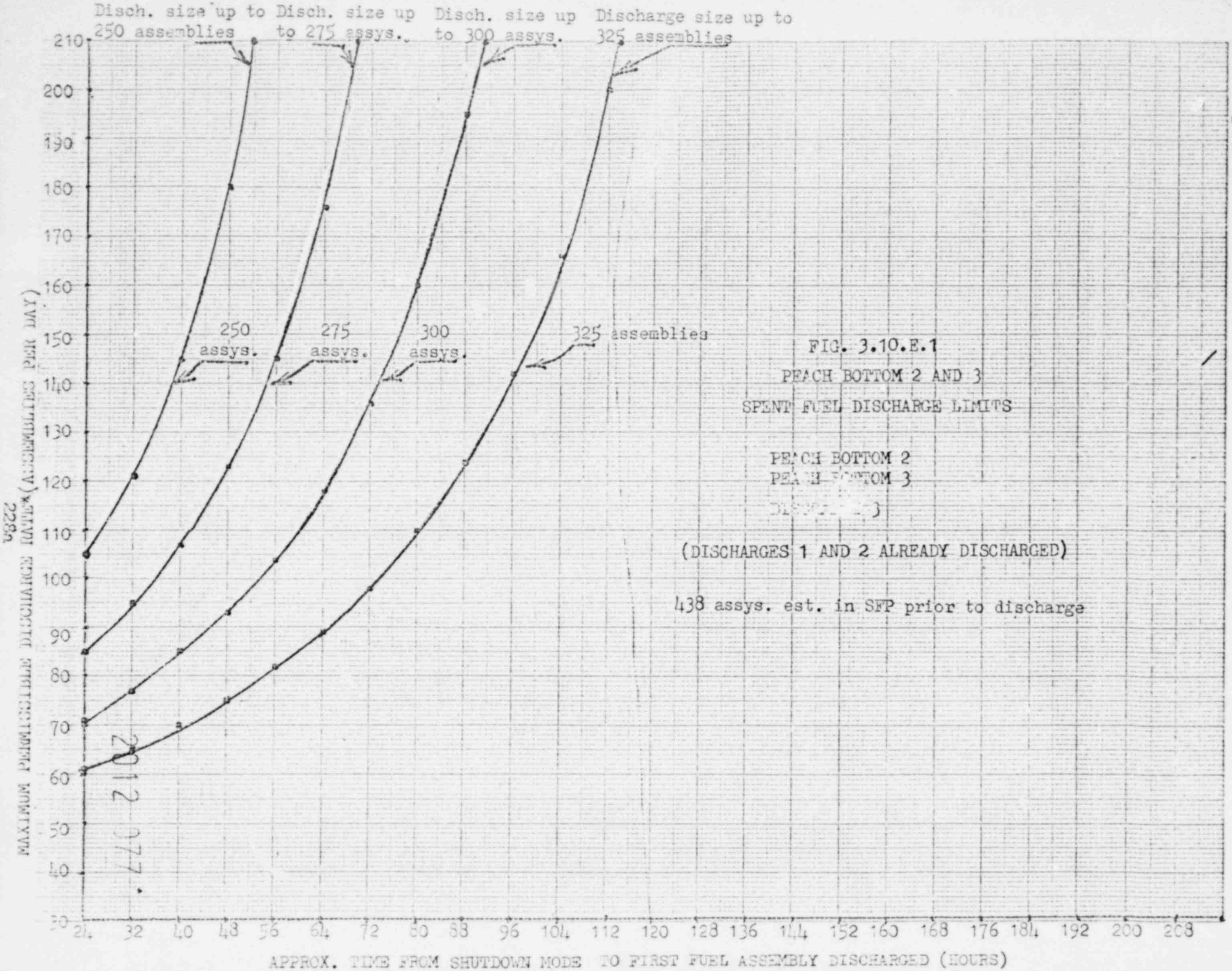


FIG. 3.10.E.1

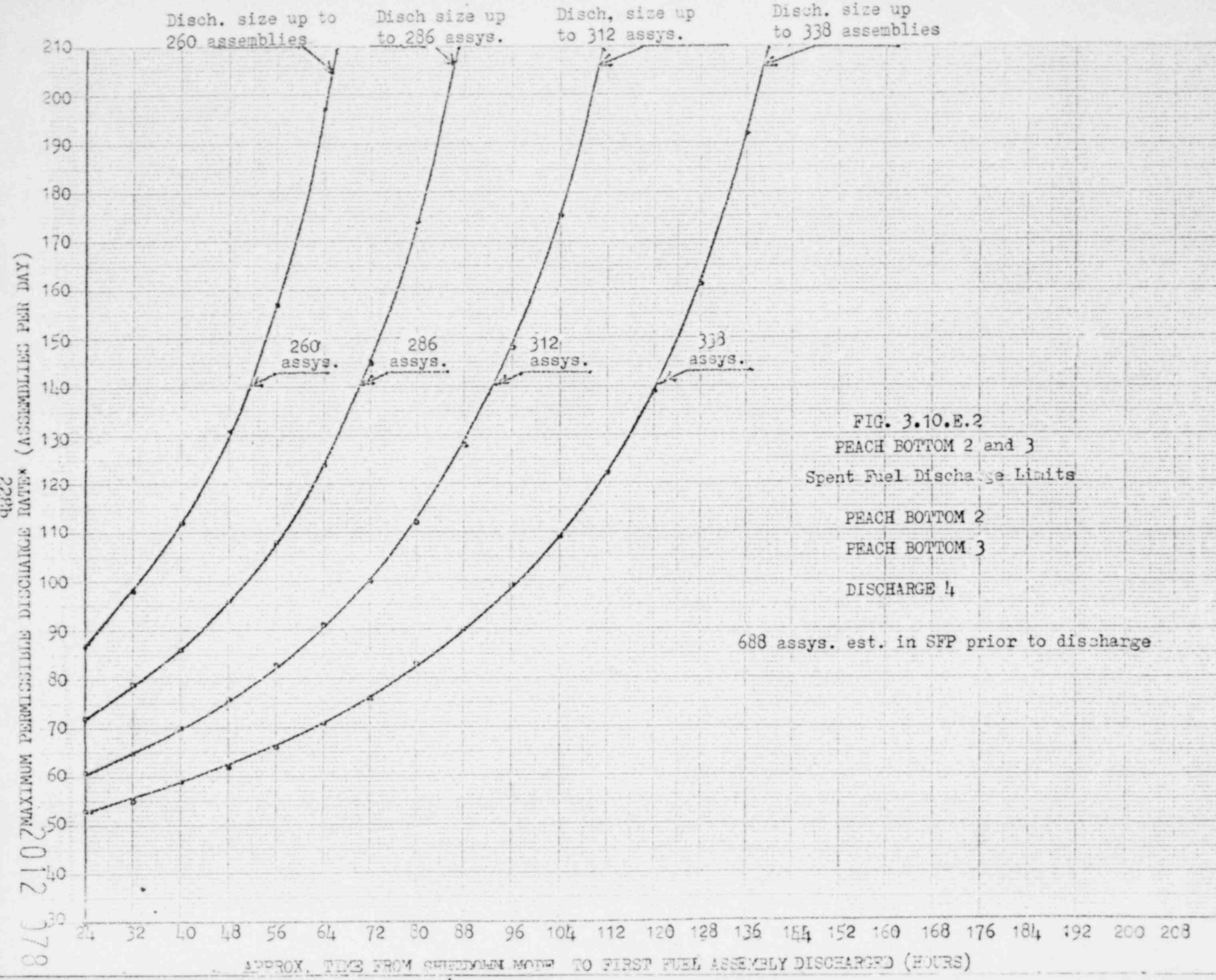
PEACH BOTTOM 2 AND 3

SPENT FUEL DISCHARGE LIMITS

PEACH BOTTOM 2
PEA[illegible]TOM 3
[illegible])

(DISCHARGES 1 AND 2 ALREADY DISCHARGED)

438 assys. est. in SFP prior to discharge



228b

7 2012 078

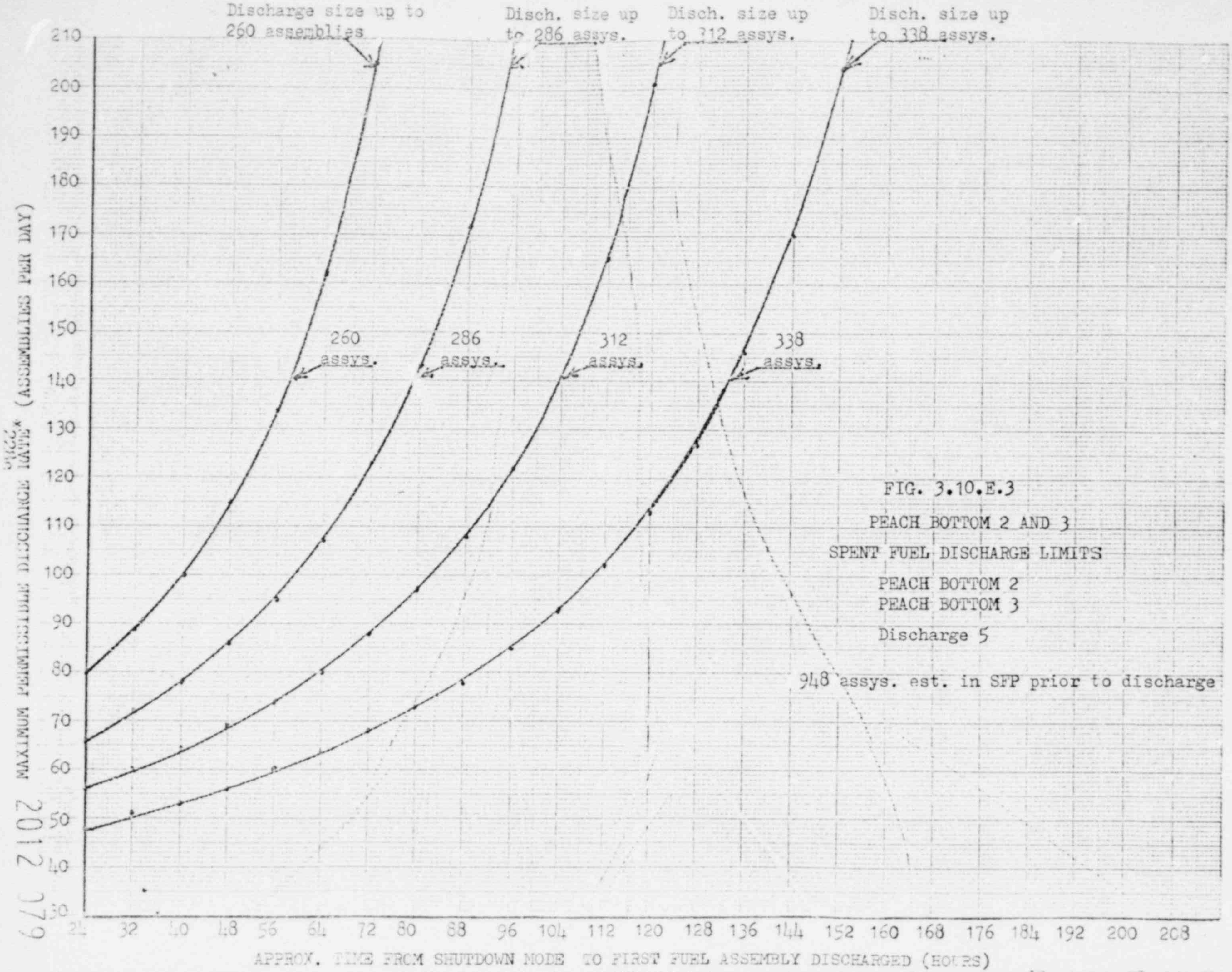


FIG. 3.10.E.3

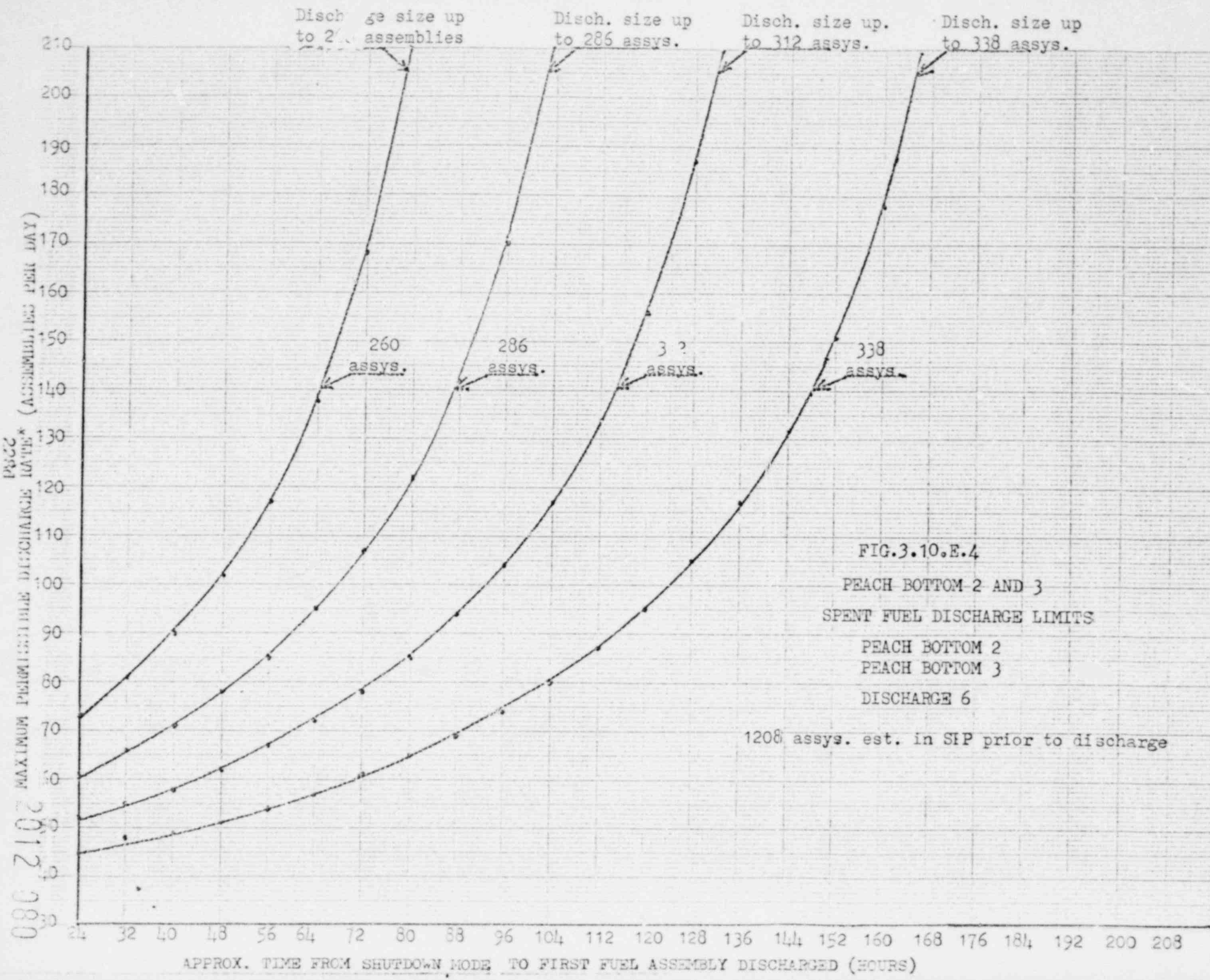
PEACH BOTTOM 2 AND 3

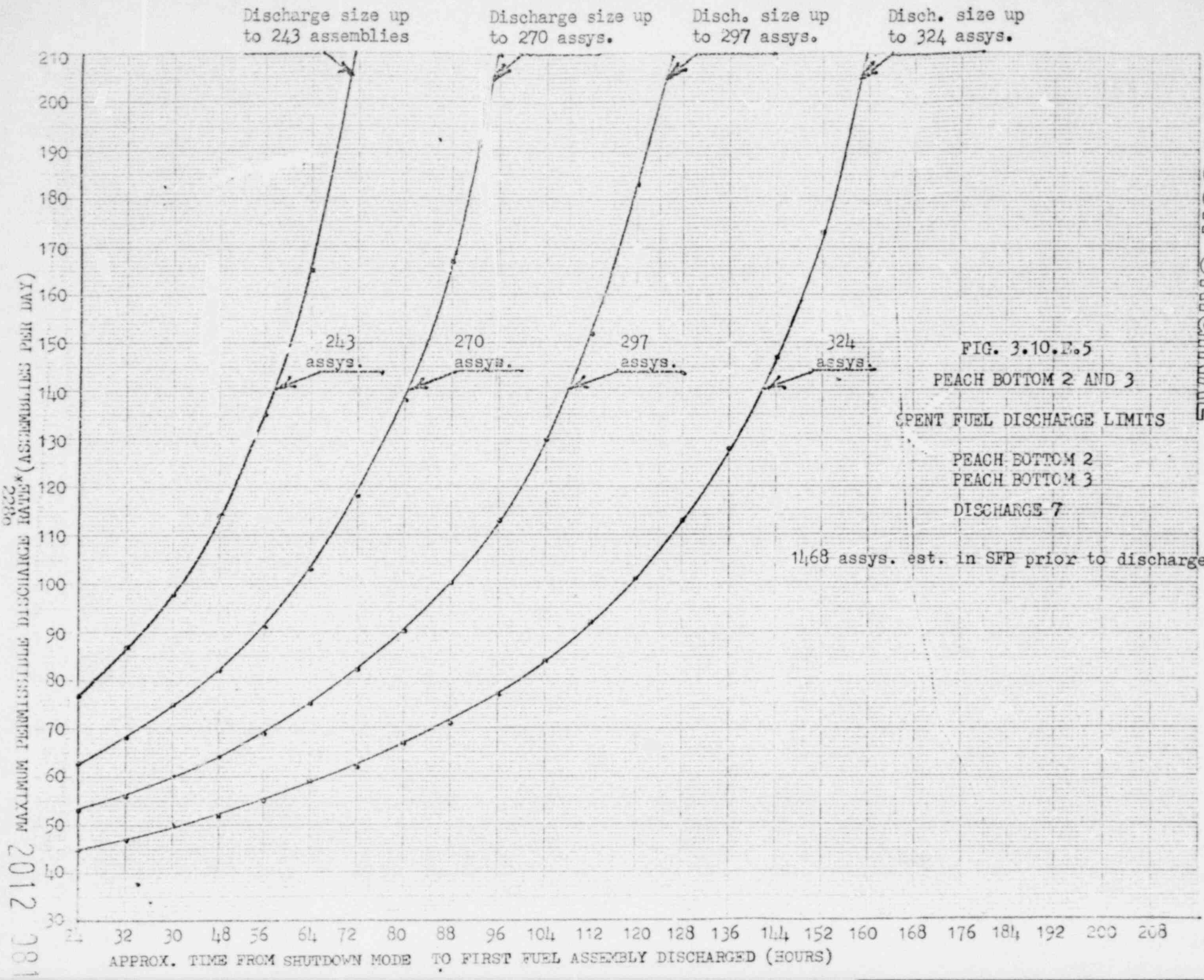
SPENT FUEL DISCHARGE LIMITS

PEACH BOTTOM 2
PEACH BOTTOM 3

Discharge 5

2012 079


Disch ge size up
to 2 assemblies
Disch. size up
to 286 assys.
Disch. size up.
to 312 assys.
Disch. size up
to 338 assys.
260
assys.
286
assys.
3 2
assys.
338
assys.
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
24
32
40
48
56
64
72
80
88
96
104
112
120
128
136
144
152
160
168
176
184
192
200
208
MAXIMUM PERMISSIBLE DISCHARGE RATE* (ASSEMBLIES PER DAY)
APPROX. TIME FROM SHUTDOWN MODE TO FIRST FUEL ASSEMBLY DISCHARGED (HOURS)
FIG.3.10.E.4
PEACH BOTTOM 2 AND 3
SPENT FUEL DISCHARGE LIMITS
PEACH BOTTOM 2
PEACH BOTTOM 3
DISCHARGE 6
1208 assys. est. in SFP prior to discharge



Discharge size up to 243 assemblies
Discharge size up to 270 assys.
Disch. size up to 297 assys.
Disch. size up to 324 assys.
243 assys.
270 assys.
297 assys.
324 assys.
FIG. 3.10.E.5
PEACH BOTTOM 2 AND 3
SPENT FUEL DISCHARGE LIMITS
PEACH BOTTOM 2
PEACH BOTTOM 3
DISCHARGE 7
1468 assys. est. in SFP prior to discharge
MAXIMUM PERMISSIBLE DISCHARGE RATE* (ASSEMBLIES PER DAY)
APPROX. TIME FROM SHUTDOWN MODE TO FIRST FUEL ASSEMBLY DISCHARGED (HOURS)

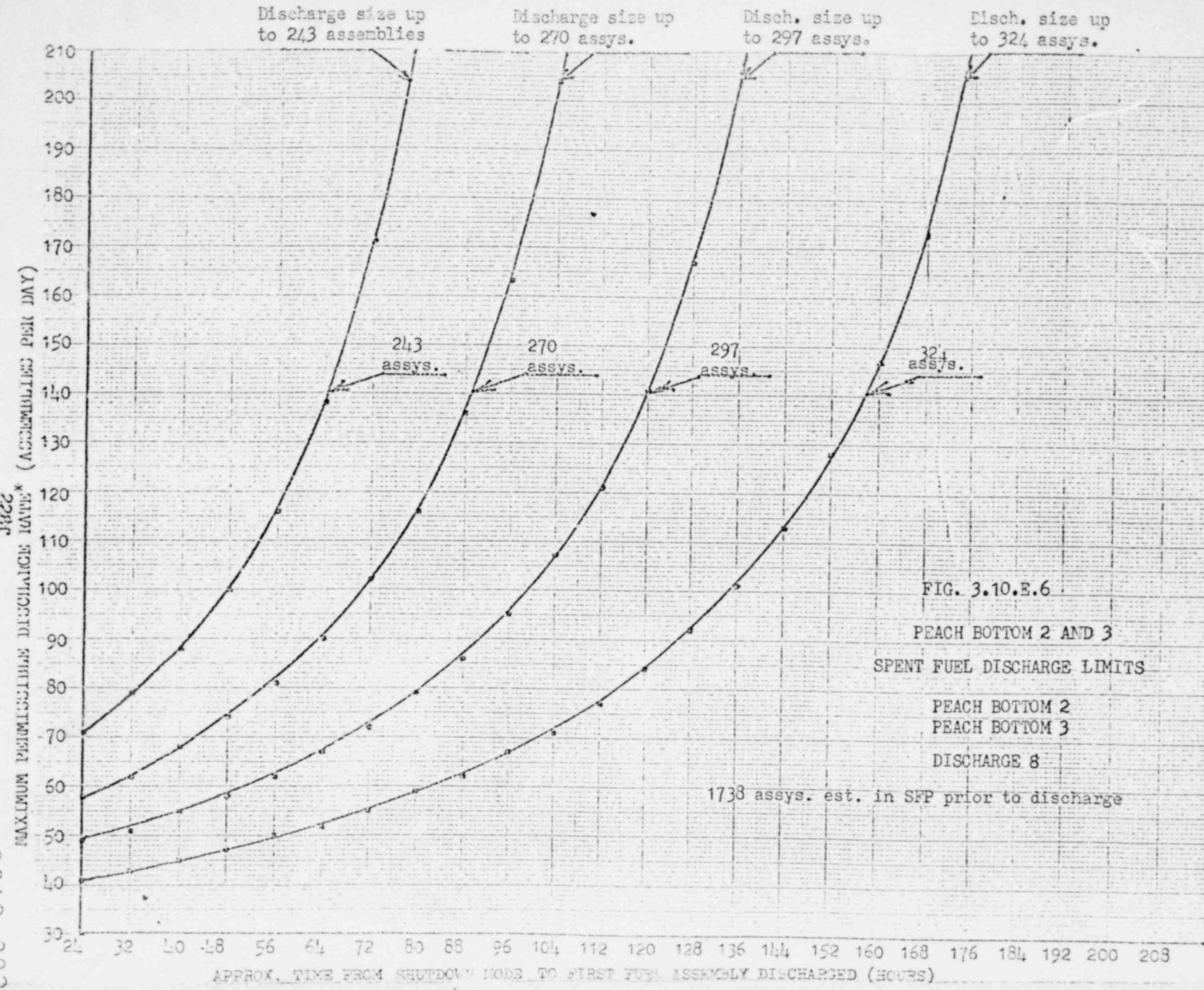


FIG. 3.10.E.6

PEACH BOTTOM 2 AND 3

SPENT FUEL DISCHARGE LIMITS

PEACH BOTTOM 2
PEACH BOTTOM 3

DISCHARGE 8

1738 assys. est. in SFP prior to discharge

2012 082

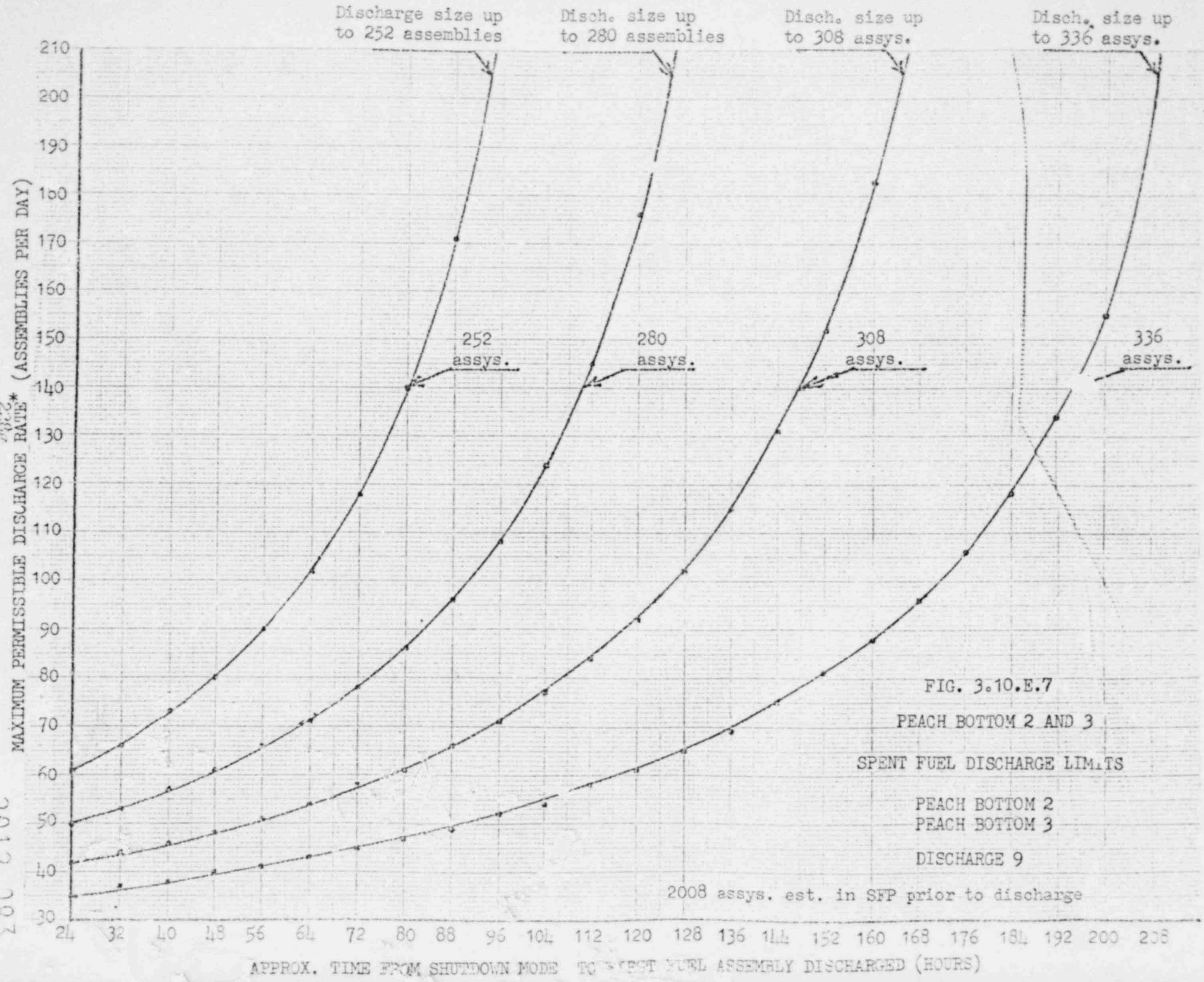


FIG. 3.10.E.7

PEACH BOTTOM 2 AND 3

SPENT FUEL DISCHARGE LIM.TS

PEACH BOTTOM 2
PEACH BOTTOM 3

DISCHARGE 9

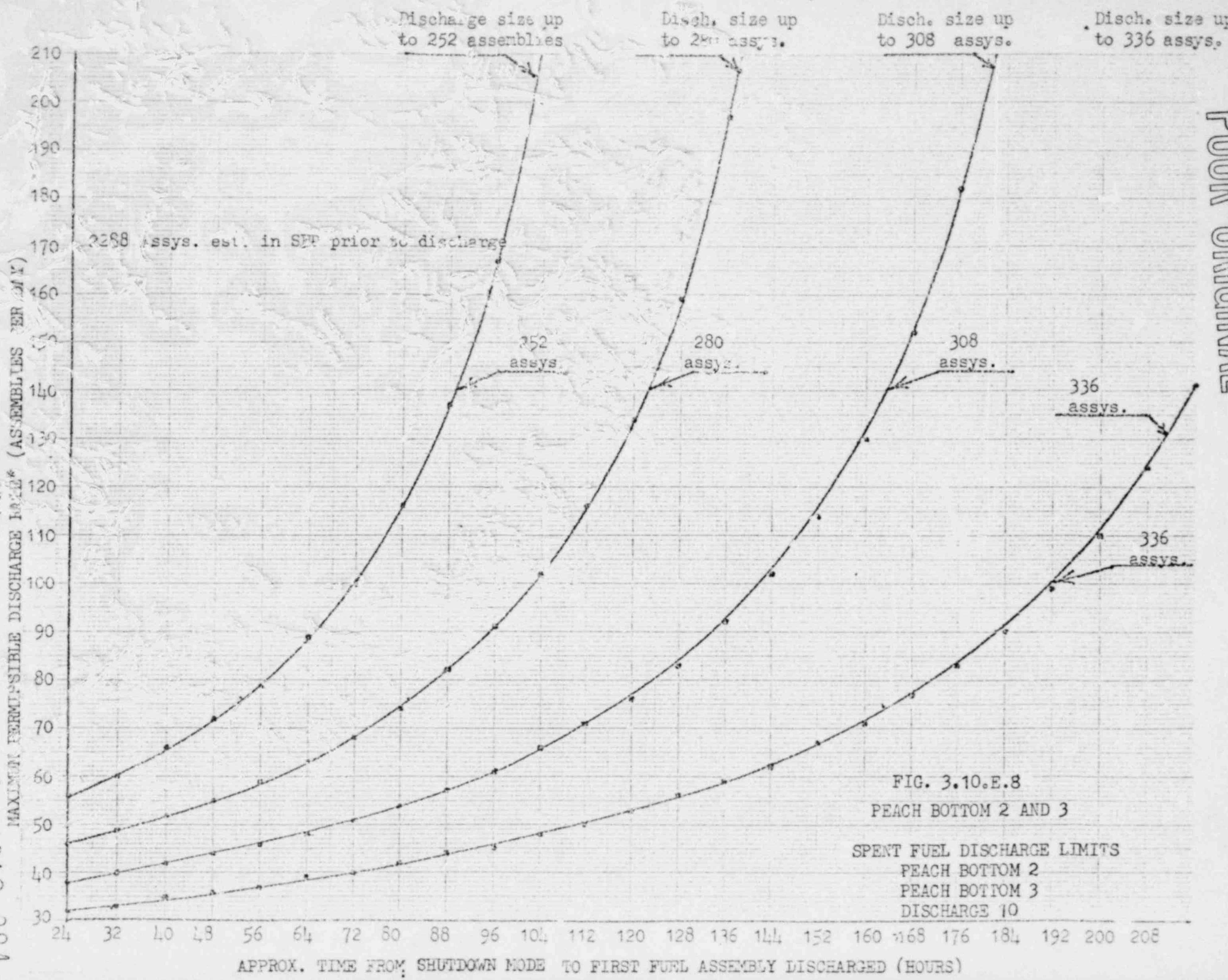


FIG. 3.10.E.8

PEACH BOTTOM 2 AND 3

SPENT FUEL DISCHARGE LIMITS
PEACH BOTTOM 2
PEACH BOTTOM 3
DISCHARGE 10

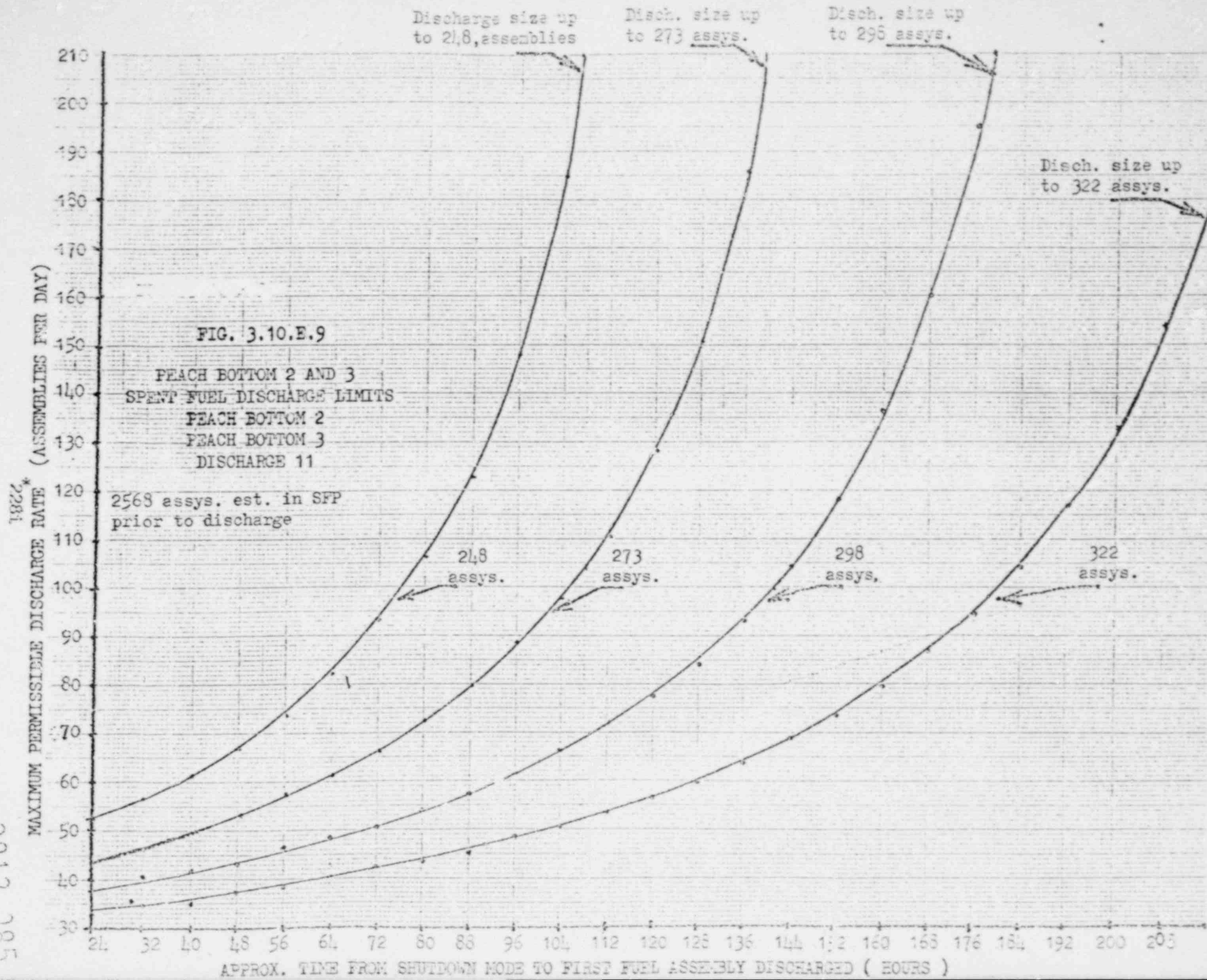


FIG. 3.10.E.9
PEACH BOTTOM 2 AND 3
SPENT FUEL DISCHARGE LIMITS
PEACH BOTTOM 2
PEACH BOTTOM 3
DISCHARGE 11
2568 assys. est. in SFP
prior to discharge
Discharge size up to 248, assemblies
Disch. size up to 273 assys.
Disch. size up to 298 assys.
Disch. size up to 322 assys.
248 assys.
273 assys.
298 assys.
322 assys.
MAXIMUM PERMISSIBLE DISCHARGE RATE* (ASSEMBLIES PER DAY)
APPROX. TIME FROM SHUTDOWN MODE TO FIRST FUEL ASSEMBLY DISCHARGED (HOURS)
*2281
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
24
32
40
48
56
64
72
80
88
96
104
112
120
128
136
144
152
160
168
176
184
192
200
208

2012 085

Figures 3.10.E.1 through 9

INTRUCTIONS

1) Using the discharge (cycle) number, select the corresponding figure from Figures 3.10.E.1 through 9.

2) Select the one curve (of the four in the figure selected in item 1 above) which corresponds to the discharge size next highest to (or equal to) the total number of assemblies to be moved to the SFP during the outage.

3) Using the time from reactor shutdown to first fuel assembly discharged (ordinate) which is achieved during the outage, read the coordinate maximum permissible discharge rate* from the curve selected in item 2) above. This maximum permissible discharge rate shall be used as a limit during the outage, in order to maintain SFP temperature less than or equal to 150°F.

4) If it is desired to correct the maximum permissible discharge rate for cooling (river) water temperatures, determine the river water temperature at time of first discharge and every 24 hours thereafter. Using the appropriate correction factor, multiply the maximum permissible discharge rate obtained in item (3) above by the correction factor for that 24 hour period. The corrected maximum permissible discharge rate shall be used as a limit during the corresponding 24 hour segment of the outage. Correction factors are as follows:

    a) 71°F - 80°F cooling water: 1.5
    b) 61°F - 70°F: 2.5
    c) 60°F or lower: 4.0

5) The maximum permissible rate operates cumulatively; that is, if the permissible rate for a particular discharge is 100 assemblies per day and only 50 assemblies are discharged the first day, then 150 may be discharged the second day.

* This is the maximum rate at which fuel assemblies in the discharge indicated above may be moved to the SFP in order to limit SFP temperatures to 150°F or less, for the four maximum discharge sizes shown in each figure, as a function of the time from when the reactor is placed in shutdown mode until the first fuel assembly is discharged, assuming that a) two SFP cooling trains are in operation and b) cooling (river) water temperature to the SFP heat exchangers is 90°F.

2012 086

3.10 BASES

E. Maximum Permissible Rate for Spent Fuel Discharge

In order to limit SFP peak bulk temperatures during a spent fuel discharge to 150°F or less, it is necessary to limit the rate of input of heat from spent fuel assemblies. The heat input is a strong function of a) the number of spent fuel assemblies in a particular discharge, b) the time after reactor shutdown mode at which fuel assemblies are discharged, and c) the rate at which the discharged fuel assemblies are moved to the spent fuel pool. The heat input is also a weak function of the exposure of the assemblies being discharged, and of number, exposure, and age of fuel assemblies in prior discharges. The parametric analysis whose results are shown in Figures 3.10.E.1-9 accounts for both the weak and strong factors, and in addition accounts for variations in the strong factors. By limiting the daily discharge rate to a conservative maximum as a function of the number of assemblies in the discharge and the time from shutdown mode to first assembly discharged, adequate control of the heat input to the spent fuel pool is maintained based on easily obtained operating data. Also, since the temperature of the cooling water to the SFP cooling system heat exchangers significantly affects the ability of the system to remove heat, correction factors have been included for temperature of the river water.

The fuel decay energy release rates were evaluated in accordance with the NRC Standard Review Plan, Section 9.2.5, "Ultimate Heat Sink." Fuel assemblies in the discharges were assumed to have an average exposure of 40,000 MWD/MTU. The number of spent fuel assemblies assumed to be in the SFP prior to each discharge is noted in the corresponding figure. Two (of three) SFP cooling pumps/heat exchangers were assumed to be in operation, with 400,000 lbs/hr of cooling water to the shell side of each heat exchanger at the calculated bulk pool temperature.

The data resulting from this analysis is applicable when the spent fuel pool cooling system is used to cool the SFP during discharges of the maximum sizes shown in each figure. If the Residual Heat Removal (RHR) system is used for spent fuel pool cooling (such as during a full-core discharge), no limitations on discharge rates are necessary in order to maintain SFP temperatures at or below 150°F.

TABLE 3.7.1 (Cont'd.)

PRIMARY CONTAINMENT ISOLATION VALVES

Group	Valve Identification	Number of Power Operated Valves Inboard	Outboard	Maximum Operating Time (sec.)	Normal Position	Action on Initiating Signal
NA	Feedwater check valves	2*	2*	NA	O	Process
NA	Control Rod Hydraulic Return Valve		1*	NA	C	Locked Closed
NA	Control rod hydraulic return check valves	1*	1*	NA	O	Process
2D	Oxygen Analyzer System		14	NA	O	GC
NA	Standby liquid control system check valves	1*	1*	NA	C	Process
2B	RHRS shutdown cooling suction isolation valves	1	1	32	C	SC
2B	RHRS shutdown cooling injection isolation valves		1	24	C	SC
2B	RHRS Reactor Vessel Head Spray isolation valves	1	1	30	C	SC
2C	Feedwater Flush Valves		2	50	C	SC
4	HPCIS steam line isolation valves	1	1	20	O	GC
5	RCICS steam line isolation valves	1	1	15	O	GC
2A	Reactor water cleanup system isolation valves	1	1	30	O	GC
2A	Reactor water cleanup system return isolation valve		1	20	O	GC

* Valves not power operated