REACTOR COOLANT SYSTEM

REACTOR COOLANT SYSTEM VENTS

LIMITING CONDITION FOR OPERATION

3.4.5.2 Two redundant Reactor Coolant System Vent (RCSV) paths shall be OPERABLE.

APPLICABILITY: Modes 1, 2 and 3.

ACTION:

a. With only one RCSV path OPERABLE, STARTUP and/or POWER OPERATION may continue provided the inoperable path is maintained closed with power removed from the valve actuators; otherwise be in HOT STANDBY within 6 hours and HOT SHUTDOWN within the following 6 hours.

b. With no RCSV path OPERABLE within 24 hours either restore at least one path to OPERABLE status or be in HOT SHUTDOWN.

SURVEILLANCE REQUIREMENTS

4.4.5.2 Each RCSV path shall be demonstrated OPERABLE following each refueling by:

a. Verifying that the upstream manual isolation valve is locked in the opened position.

b. Operating each remotely controlled valve through one cycle from the control room.

c. Verifying flow through the RCSV paths during system venting.

3.4.5.2 REACTOR COOLANT SYSTEM VENTS

The function of the Reactor Coolant System Vents (RCSV) is to remove non-condensables or steam from the reactor vessel head and/or pressurizer. This system is designed to mitigate a possible condition of inadequate core cooling, inadequate natural circulation, or inability to depressurize to Residual Heat Removal System initiation conditions resulting from the accumulation of non-condensable gases in the Reactor Coolant System.

The reactor vessel head vent and the pressurizer vent are each designed with redundant safety grade vent paths. Having either system OPERABLE or having one path in each system from opposite trains OPERABLE is sufficient to meet the provisions of Specification 3.4.5.2.

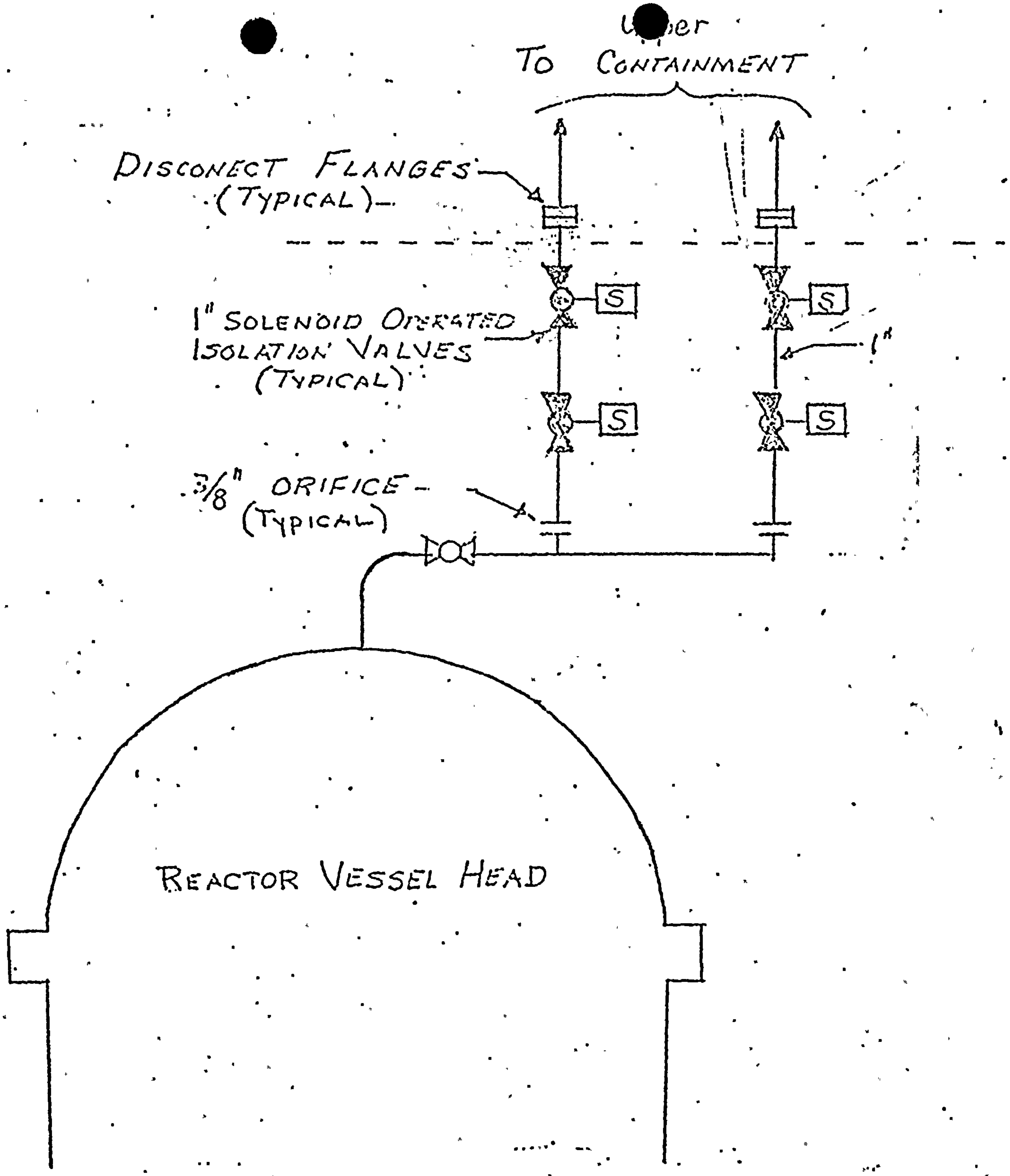


Figure 1 Dated 6/30/81

DONALD C. COOK NUCLEAR PLANT UNIT NOS. 1 AND 2

NOTE: remove or reduce the volume of hydrogen from the containment prior to re-opening the pressurizer vent.

12. Return to the appropriate operating instruction following the successful completion of the venting of the pressurizer vapor space.

APPENDIX A

PRESSURIZER VENT GUIDELINE

VENTING TIME PERIOD

1. Convert the containment free-volume to containment volume at standard temperature and pressure conditions.

$$\text{Cont. Volume (STP)} = (1.18 \times 10^6 \text{ Ft}^3) \times \left(\frac{\text{Cont. Pressure**}}{14.7 \text{ PSIA}}\right) \times \left(\frac{492°R}{\text{Cont. Temp.*}}\right)$$

$$= \_\_\_\_\_\_\_\_ \text{FT}^3$$

* Temperature in degrees Rankine (°F + 460)

**If containment pressure has increased above 14.7 psia then use 14.7 psig as pressure for conservatism.

2. Determine the containment hydrogen concentration in volume percent units.

NOTE: The containment hydrogen concentration will be insigificant if there has been no leakage from the RCS to the containment.

3. Calculate the maximum hydrogen volume that can be vented to the containment which will result in a containment hydrogen concentration of less than or equal to 3 volume percent.

$$\text{Maximum } H_2 \text{ Volume to be Vented} = \frac{(3.0\%\text{-Cont. } H_2 \text{ Concentration } \%) \times (\text{Cont. Volume [STP]})}{100\%}$$

$$= \_\_\_\_\_\_\_\_ \text{Ft}^3$$

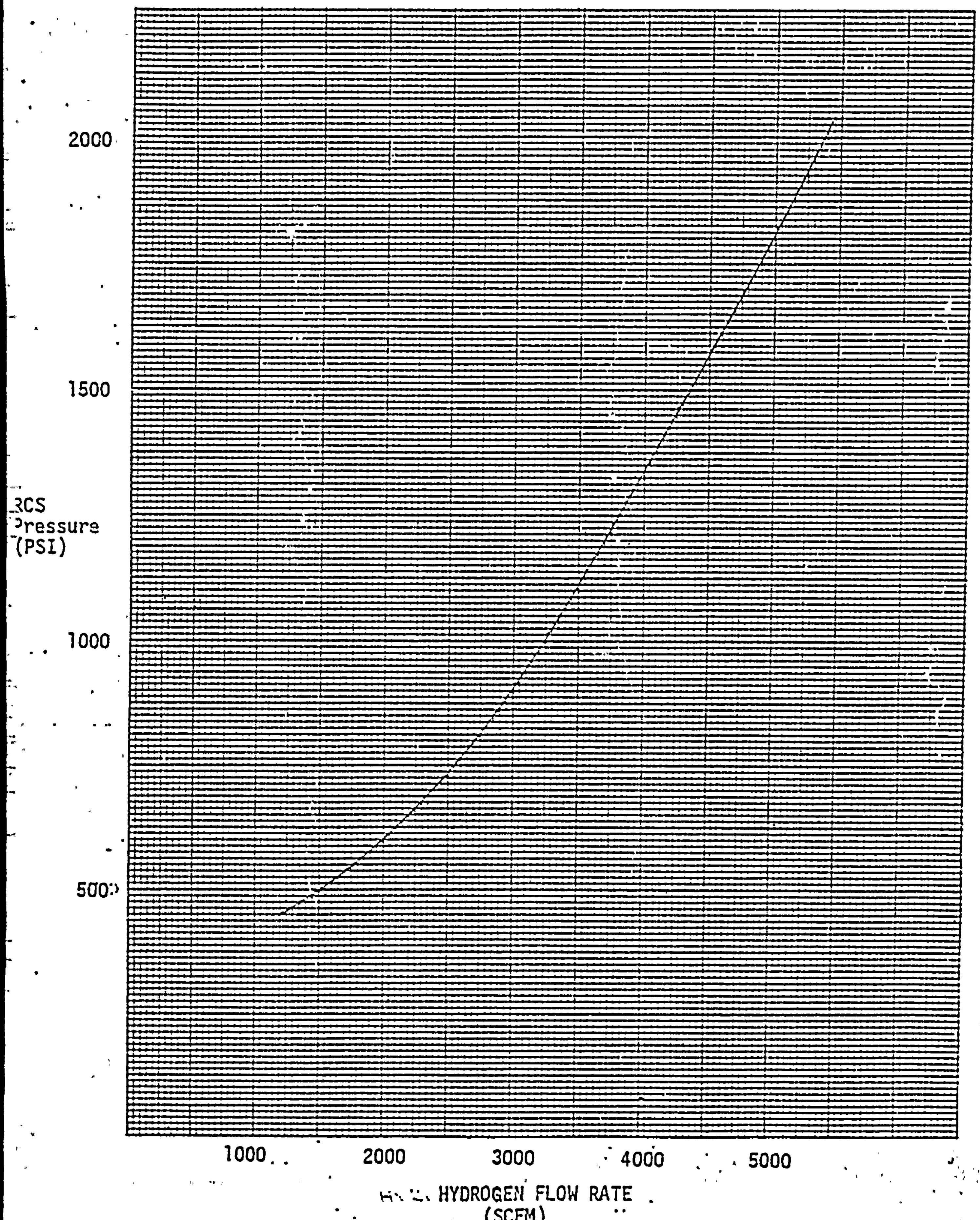
4. From Curve #1 (RCS Pressure vs. H_2 Flow Rate) determine the allowable venting period which will limit the containment hydrogen concentration to 3 volume percent.

$$\text{Venting Period} = \frac{\text{Max. } H_2 \text{ Vented (From Step 3)}}{H_2 \text{ Flow Rate}}$$

$$= \_\_\_\_\_\_\_\_ \text{Mins.}$$

CURVE #1

APPENDIX A



ATTACHMENT 4
TO AEP:NRC:0584