

# **Introduction to sodium technology – Heat transport system (secondary circuit)**

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## 1 Quiz

### 1.1 Questions

1. Name the material used for the construction of steam generator of PFBR.
2. Write the Expansion for SGDHS.
3. What is the purpose of sodium/air heat exchanger in SGDHS?
4. Which of the following activates SGDHS?  
(a) on-site/off-site power failure                      (b) reduced neutron flux  
(c) positive reactivity coefficient                      (d) reduced primary coolant flow rate
5. The ratio of number of steam generators to the number of primary sodium pumps in PFBR is  
(a) 4:1              (b) 2:1              (c) 8:1              (d) none of a, b &c
6. Which of the following property of sodium facilitates the use of electromagnetic pumps for its pumping?  
(a) high thermal conductivity                      (b) low viscosity  
(c) high resistivity                      (d) high electrical conductivity
7. The number of turbines used in the steam-water circuit of PFBR is  
(a) two              (b) three              (c) four              (d) one
8. Why are bends provided at one of the tubes of steam generator?
9. Which of the following category represents sodium-air contact in SGDHS?  
(a) concurrent (b) counter current      (c) cross current      (d) none of these
10. Electromagnetic pumps are used for pumping sodium in \_\_\_\_\_  
(a) primary circuit                      (b) secondary circuit  
(c) steam-water circuit                      (d) auxiliary circuit

### 1.2 Answers

1. Modified 9Cr-1Mo ferritic steel
2. Safety Grade Decay Heat System

3. To cool the intermediate sodium leaving the sodium-sodium heat exchanger, so that the same is available to extract heat from primary sodium in the hot pool.

4. (a) On-site/off-site power failure

5. (a) 4:1.

Note: PFBR has eight steam generators and two primary sodium pumps

6. (d) high electrical conductivity

7. (b) three

8. To account of thermal expansion

9. (c) cross current

10. (d) auxiliary circuit