



Heat Transfer Studies with Steam Generator and Decay Heat Removal System for FBRs



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Atoms For Peace

Presented by

Vinod. V

Indira Gandhi Centre for Atomic Research,
Kalpakkam, 603102, India.

vvinod@igcar.gov.in

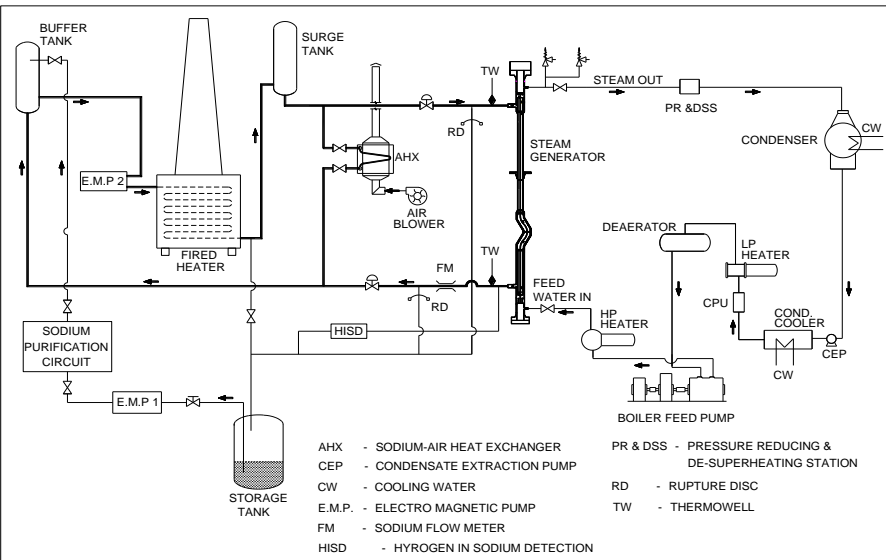
PFBR has two major heat transport paths,

1. Normal heat power transport through secondary sodium system

- Steam Generator (SG) is the critical component
- Experiments to characterize the heat transfer through SG and its operational stability, were conducted in a facility named SGTF

2. SGDHR system – a dedicated natural circulation driven system

- The system was demonstrated and experiments to characterize the behavior of the system were done in a dedicated facility named SADHANA



- 157MW SG module is studied with **19 tubes**
- 5.5MW SG model in SGTF facility
- Dimensions and operational parameters of individual tubes were maintained
- Heat transport capacity of system was experimentally demonstrated
 - Rate of steam produced **7.7% more** than the nominal steam mass flow rate.

- Experiments verified that the steam outlet temperature are **free from fluctuations** during all anticipated full & partial load conditions.
- Steam outlet temperature from individual tubes were fluctuating with large amplitudes during certain SG startup condition- Identified as **compound type pressure drop instabilities**
- On attaining sufficient superheat, these oscillations were vanished

