

# VCS 'A' EDG Fuel Oil Leak

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# VCS Safety

V.C. Summer nuclear station operates safely with rigorous internal and external controls to ensure all equipment is maintained and operates as designed.

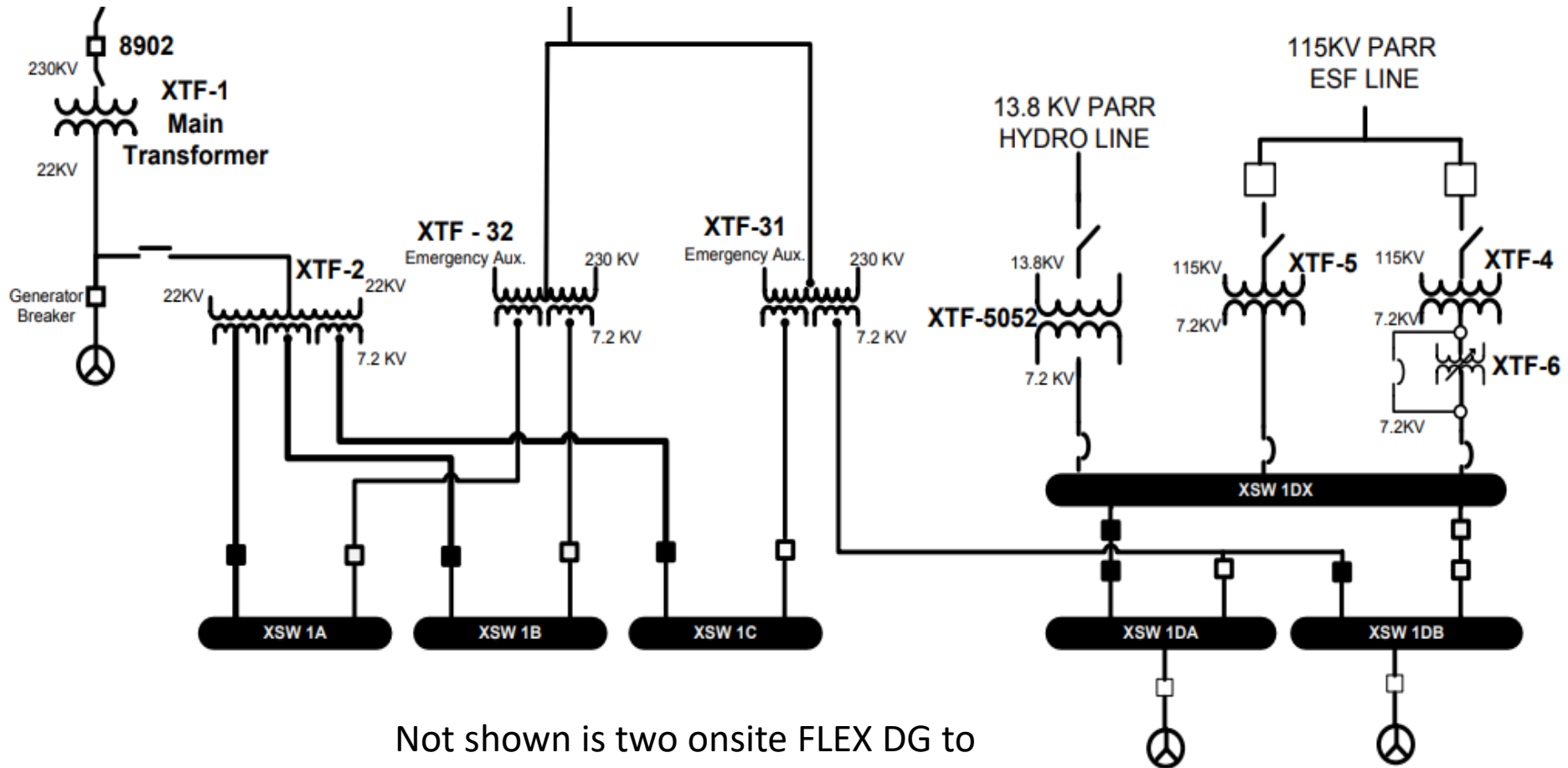
The station was never in an unsafe condition due to the diesel fuel oil leak that occurred during testing in November 2022. There are many redundancies in our protective systems. In addition to the duplicate generator, which was available, and other sources of power, the station was never in an unsafe condition.

The leak was repaired immediately and there was no impact to the environment. The station is in the process of finalizing a detailed Root Cause Evaluation of the November 2022 leak that includes industry feedback and operating experience.

# VCS Safety

- The station is designed to be maintained in a safe condition with only one of five power sources below:
  - Two independent supplies from the grid
  - A dedicated source from a nearby hydro-electric plant
  - Two onsite EDGs
- The EDGs are only needed in the unlikely event that both offsite power supplies and the dedicated hydro-electric source are not available.
- The station has portable generators to provide power to vital plant equipment and assure safety in the very unlikely event of a failure of both EDGs and loss of all three offsite power sources.

# Vital Power Supplies



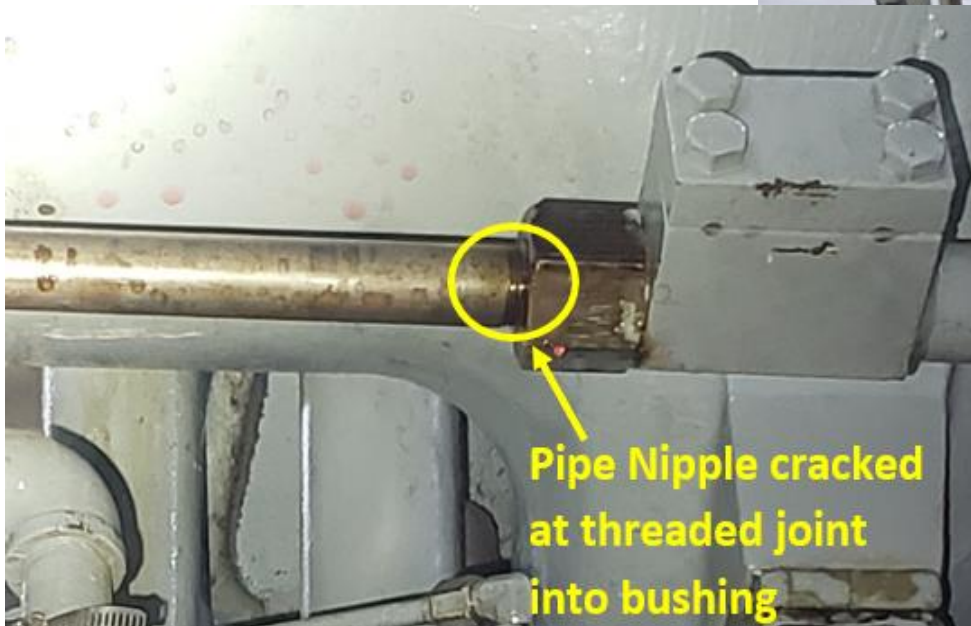
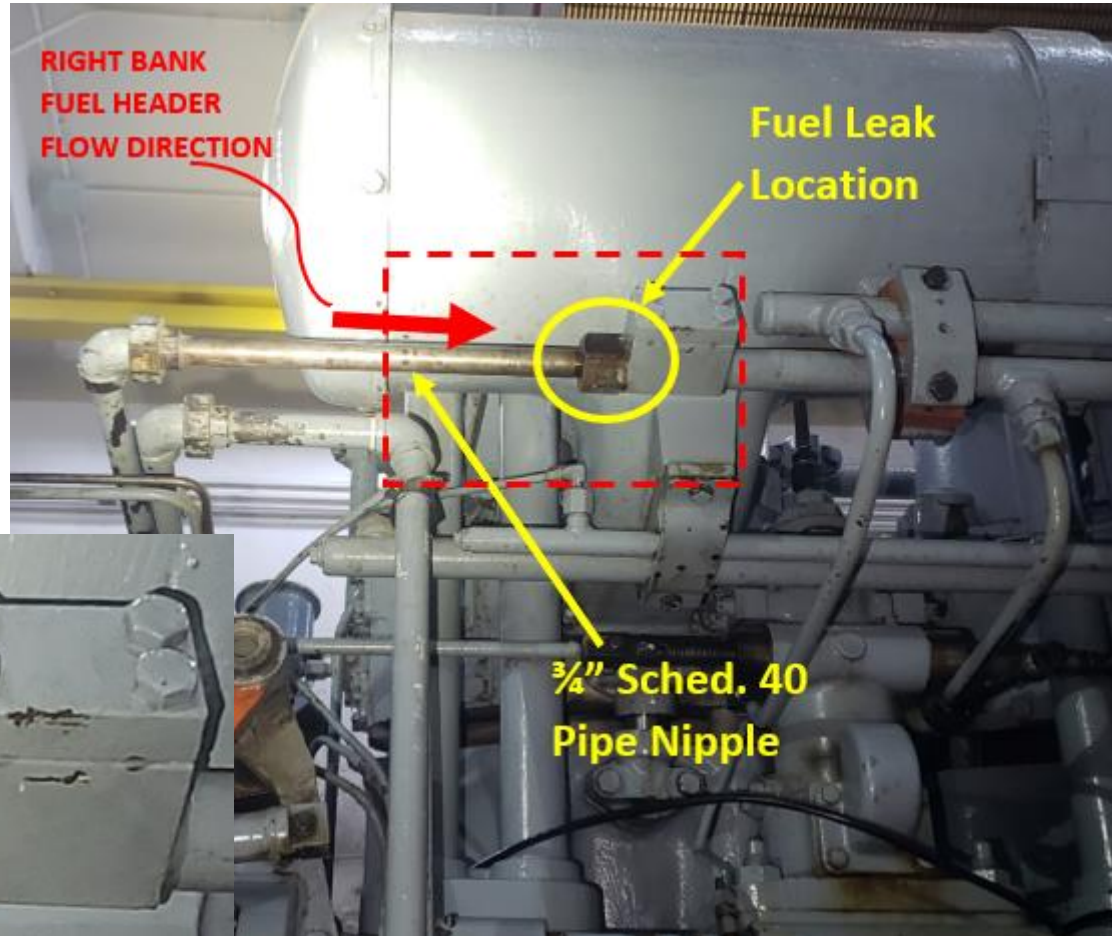
Not shown is two onsite FLEX DG to provide power for essential shutdown equipment.

Emergency Diesel Generators

# Nov. 2022- A-EDG Fuel Oil Pipe Failure

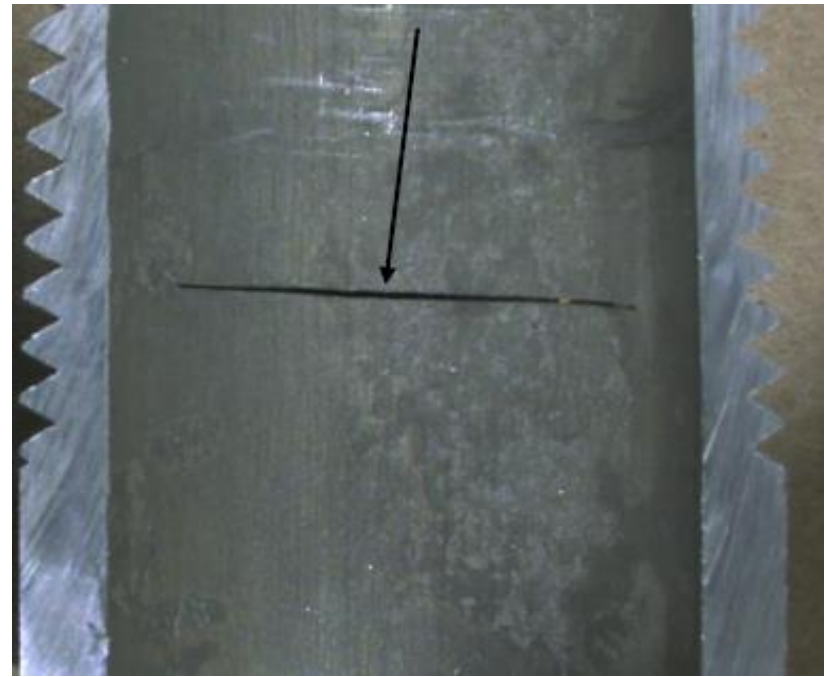
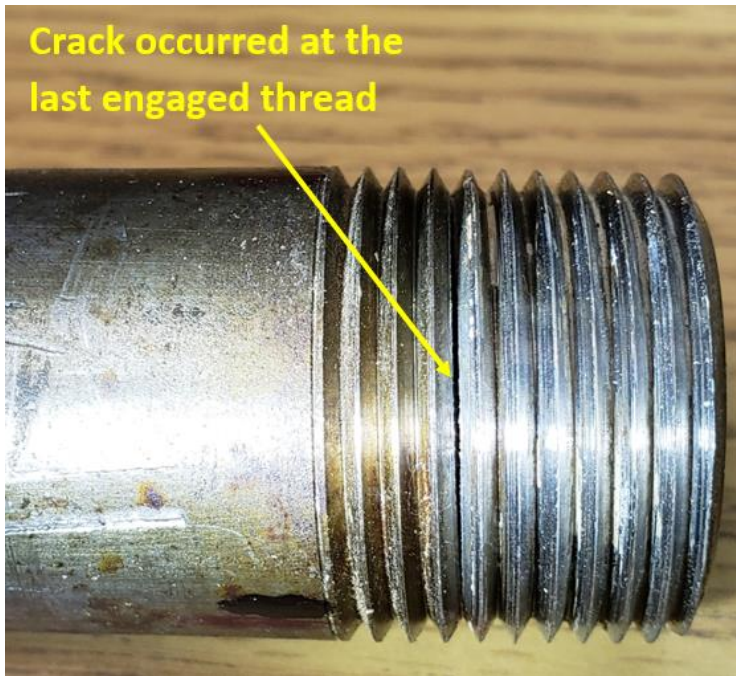
## Fuel Oil Leak Information

- 1 dpm fuel header leak started 2.5 hrs into 24hr run
- A-EDG secured 3.5 hrs. later when leak reached 4000 dpm
- Right bank fuel header  $\frac{3}{4}$ " Sch. 40 Pipe Nipple cracked at last engaged thread at bushing



# Fuel Pipe Failure Cause

- **Failure Mechanism**- High cycle mechanical (vibratory) fatigue.
- **Contributor**- Rigid pipe design and historical corrective maintenance introduced piping misalignment resulting in residual stresses.



# VCS 'A' EDG Fuel Oil Leak Preliminary Safety Significance

- The Station will provide the NRC with additional information at a Regulatory Conference in November concerning the preliminary significance finding of Yellow (Substantial Safety Significance). Our detailed evaluation indicates that the Safety Significance is White (Low to Moderate) based on the actual risk of the EDG fuel oil leak. This process is not expected to conclude until December 2023.
- The potentially affected piping on both EDGs has been replaced and the station is redesigning the EDG fuel oil piping system to increase the operating margin and improve reliability.

# Proposed EDG Redesign Piping

