

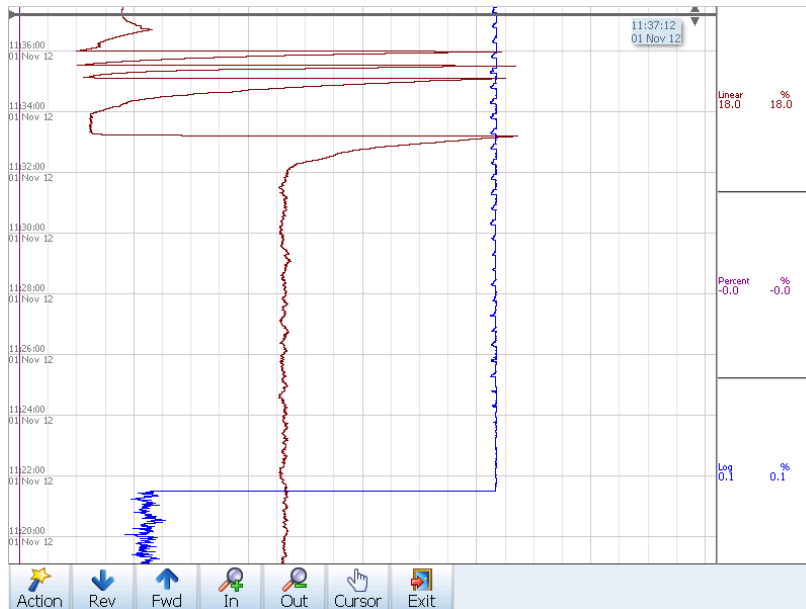
# Installing a Log Channel at the Reed Research Reactor

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TRTR 2017

# Background

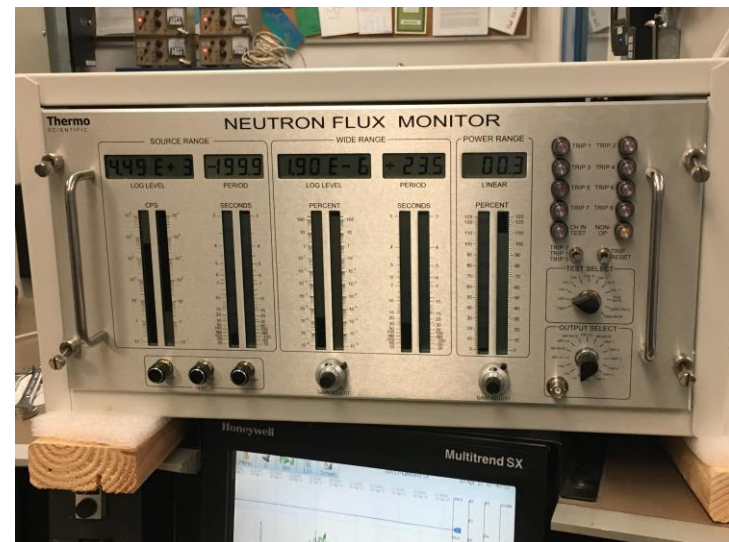


► Reed was awarded a DOE Grant in 2014

- Replace the pump
- Replace resin beds
- New log channel
  - Expand Lab experience
  - Operator Confidence

# Wide Range Logarithmic Monitor TR-10

- ▶ Source Range Level
- ▶ Source Range Period
- ▶ Wide Range Level
- ▶ Wide Range Period
- ▶ Power Range Level
- ▶ Ordered in Dec 2015



# May 2016

- ▶ Our auto water fill malfunctioned over Memorial Day weekend
  - ▶ The water got into the stands to the fission chamber and % power detector
  - ▶ With help from Steve Smith, we did a systematic repair starting at the console.
  - ▶ Pulled the detectors from the core.
- ▶ In Oct. the detectors were reinstalled.
  - ▶ A UCI was donated from Oregon State
  - ▶ UC Irvine donated a CI
- ▶ The log channel failed again
  - ▶ NOV
- ▶ No operations until the new fission chamber and log channel are installed.

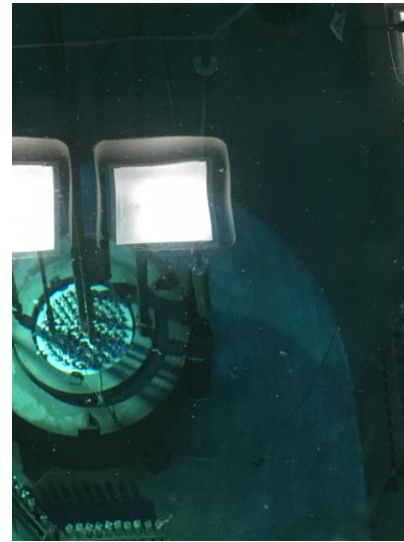
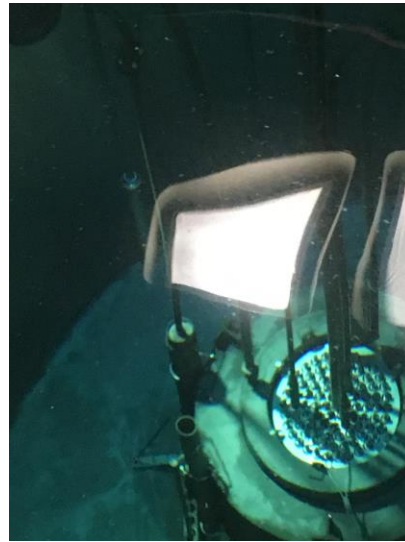
# Staffing Challenges and Morale

- ▶ Qualified staff
  - ▶ Two operators went to OSU twice to stay in requal
  - ▶ No Reactor Operator exams May 2017
    - ▶ Insufficient time from install to exam date for required reactivity manipulations
  - ▶ SRO exams in pushed to July 2017
    - ▶ Downstream impact when there will be few SRO candidates due to the 1 year requirement
- ▶ How do you keep a training program going with no reactor.
  - ▶ Frontload the training program with lectures and labs that do not require operations
  - ▶ FAKE OPERATIONS
    - ▶ Yellow stickie notes on the console
    - ▶ What happens next?

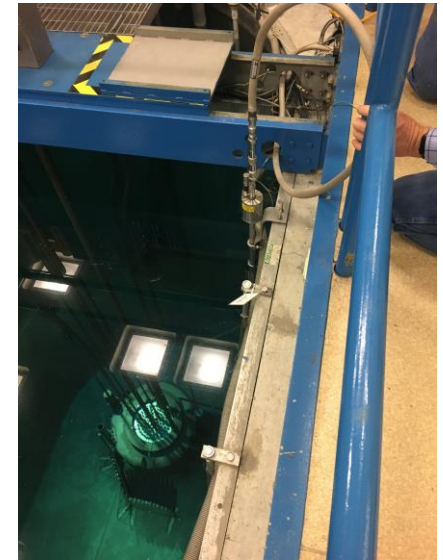
# Delivery 4/18/2017



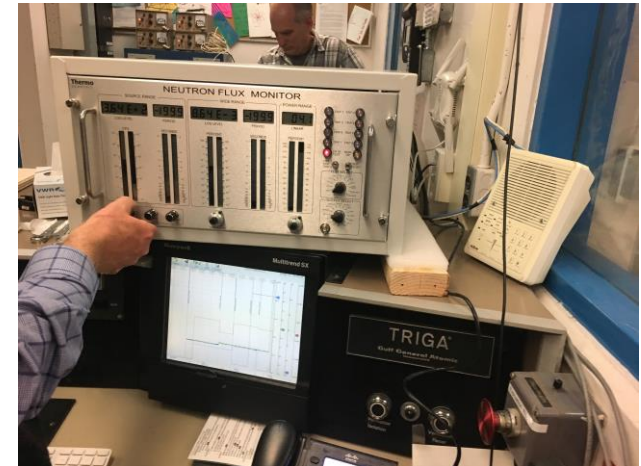
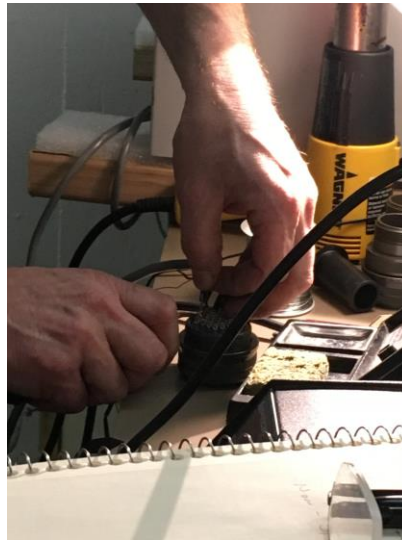
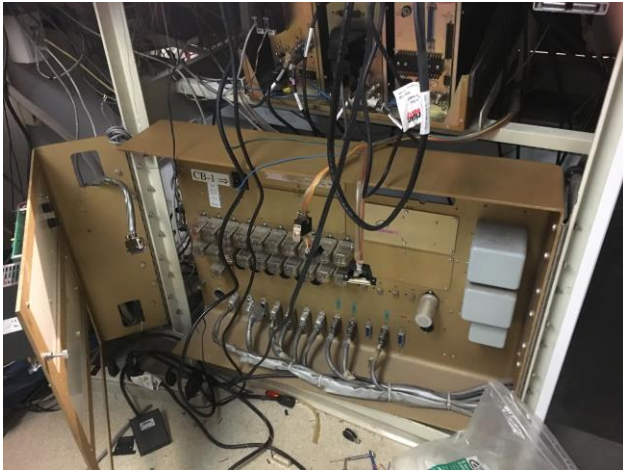
# Pool Install

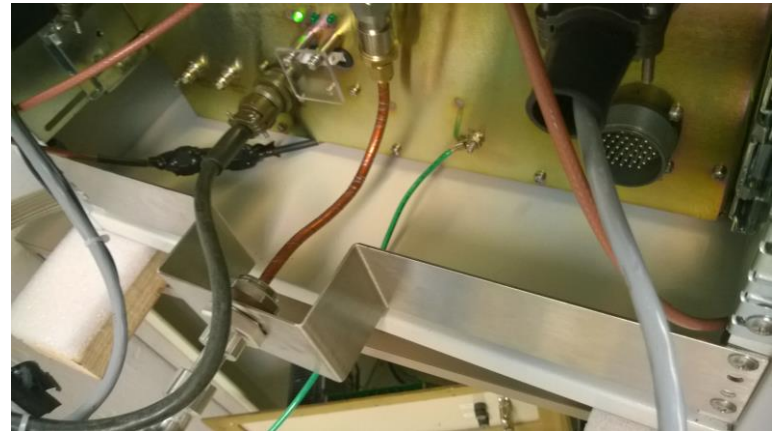


# Connections



# Console Install





# Advantages of the new channel

- ▶ Pressure Tight Detector Assembly
  - ▶ Learned from post Three Mile Island Reg Guide 1.97 experience in power plants
- ▶ Noisy Environment
  - ▶ Triaxial shield carried to cabinet
  - ▶ EMI/RFI Test Pedigree
  - ▶ Cabinet grounding issues
  - ▶ AC Power noise in console



# Normal Operations

- ▶ Since the installation
- ▶ Six SRO exams (July 10-14)
- ▶ 10 individuals back in requal
- ▶ RO and SRO exams scheduled in Oct.
  - ▶ Candidates who were set for May 2017
  - ▶ Training will be resumed in the fall

