Casks bring irradiated items into HFEF.

Flow of Samples through PIE Processes

Experiment, test train or assembly

- Full size fuel elements or experiment hardware
- Non-destructive PIE analysis and feedstock for all PIE samples and test specimens
- End use or user

- Main Cell at Window 10-M, 6-M or 3-M in HFEF
- Full size fuel elements, fuel plates or experiment hardware for non-destructive examination
- Main Cell at Window 3-M, 6-M or 10-M in HFEF
- NRAD Neutron radiographic analysis
- Small sized samples or coupons for analysis
- Sectioned pieces for further size reduction and analysis
- Mounted and polished samples
- Specific sized samples or coupons

- Main Cell at Window 2-M
- Containment Box in HFEF
- Metallurgical analysis
- Specific sized samples or coupons

- Laboratory sample preparation areas in AL, FASB, EML, IMCL, and APEX
- Specific sized samples or coupons

- Fission gas sample from full size fuel elements
- ATR or other reactor
- Full size fuel elements or experiment hardware
- Remove fuel, replace fuel and reassemble element and experiment hardware

- Miniature sized samples or coupons
- At FIB systems in CAES, EML, IMCL, and APEX
- Specific sized samples or coupons

- Chemical, metallurgical and pellet analysis
- Mechanical and metallurgical analysis
- Chemical and metallurgical analysis
- Metallurgical analysis
- Metallurgical and radiological analysis
- Others as needed

- Visual examination data
- Surface condition data

Idaho National Laboratory
Post-Irradiation Examination Capabilities

4/27/2012