

A
AREVA

***AREVA Lynchburg Fuel Fabrication, Meeting
to Discuss Cessation of SNM Operations
and Continued Licensed Operations***

August 5, 2010

Agenda

- ▶ **Purpose**
- ▶ **Schedule for winding down SNM operations**
- ▶ **Historic fuel fabrication building expansion and use**
- ▶ **SNM license approach and discussion with NRC/VA DOH on license path forward**
- ▶ **Nuclear Criticality Alarms System Termination**
 - ◆ Hematite and Windsor examples
- ▶ **Discuss actions needed to reduce license part 171 fee**
- ▶ **IAEA commitments, Security Plan, FNMCP, ISA, etc.**
- ▶ **Potential future licensed activities in fuel building**
 - ◆ Clear understanding of path forward with respect to timeliness rule
- ▶ **Discussion**

Purpose

- ▶ Share AREVA's plans and schedule for fuel activities with NRC and State and continued activities with radioactive material
- ▶ Ensure regulatory path forward is understood particularly with respect to "timeliness" rule
- ▶ Provide historical summary of MAR facility
- ▶ Concurrence on criticality alarm system, license fee, FNMCP, Security plan, ISA and end state of fuel plant

AREVA US Fuel Manufacturing Consolidation

- ▶ **Consolidation project for the US manufacturing activities announced September 29, 2009.**
- ▶ **Richland Site Activities (HRR)**
 - ◆ *Multiple PWR fuel designs requiring transfer from MAR to HRR*
 - ◆ *Last design projected to transfer in February 2012*
- ▶ **Lynchburg Site Activities (MAR)**
 - ◆ *Projected last rods&bundles operations in February 2011*
 - ◆ *Last fuel shipment from MAR site scheduled to leave in July 2011*
 - ◆ *Back-up facility as needed*
- ▶ **Risk Management**
 - ◆ *MAR remains full back-up for HRR until spring of 2011*

MAR site projected to become fully dedicated to Fuel Field Services & Nuclear Services in October 2011

Operation and License Run Down Schedule

- ▶ **February 2011**
 - ◆ Complete fuel rod loading and bundle assembly
 - ◆ Package and return uranium scrap to Richland
 - ◆ Package and ship limited contaminated equipment to Richland
 - ◆ Package and ship for disposal surplus contaminated equipment
 - ◆ Start pellet loading room decontamination
- ▶ **April 2011**
 - ◆ Start move of BP pellet line (non-SNM)
 - ◆ Move grid fabrication (non-SNM)
- ▶ **July 2011**
 - ◆ Ship final fuel assemblies
 - ◆ Final SNM Inventory (zero balance)
- ▶ **Fall 2011**
 - ◆ Complete decontamination of pellet loading room using common methods
 - ◆ Deactivate nuclear criticality alarm system when clean out is complete

All Activities/Material Transfer to State License

- ▶ **Clean up and transfer NRC licensed material to State license :**
 - ◆ Clean up the bulk SNM and ship to Richland for recycle/recovery
 - ◆ Decontaminate the Pellet Loading Room
 - Package and Ship useful equipment
 - Decontaminate and/or volume reduce, package and dispose surplus contaminated equipment
 - Decontaminate and dispose of waste
 - Survey room and leave residual contamination consistent with State License
- ◆ **Authorize the possession of residual SNM contamination on State License**
- ◆ **Residual contamination does not carry a book value**
 - Contamination on walls, ducts, pipes, floors, soil counts as zero unless collected and put in bulk form.
- ◆ **Terminate the SNM license**
- ◆ **SNM possession limits consistent with State requirements (<350g U-235) 10CFR150**
- ◆ **Update decommissioning file**

All Activities Transfer to State License and SNM Residue on Possession Only SNM License

► Clean up and diminish SNM license:

- ◆ Clean up the bulk SNM and ship to Richland for recycle/recovery
- ◆ Decontaminate the Pellet Loading Room
 - Package and Ship useful equipment
 - Decontaminate and/or volume reduce, package and dispose surplus contaminated equipment
 - Decontaminate and dispose of waste
 - Survey room residual contamination consistent with State License
- ◆ **SNM in license as contamination (Possession Only License)**
- ◆ **Residual contamination does not carry a book value**
 - Contamination on walls, ducts, pipes, floors, soil counts as zero unless processed and put in bulk form.
 - SNM possession limits consistent with State requirements (<350g U-235) and 10 CFR150
 - SNM license in effect becomes a place holder (Possession Only) for future activities or decommissioning.

► Update Decommissioning File

Decommissioning

► Decommissioning: (not practical)

◆ The Sites principal activities continue under the state license

- Since "principal activities" continue, actions under timeliness rule should not commence
- Somewhat unique with respect to rule since the site is now covered by two licenses
- Does not make sense to clean up SNM contamination and then recontaminate with byproduct or source material.

◆ Options are being developed for the continued use of portions of the fuel building for the handling and storage of radioactive material

- The current pellet loading room and vaults provide great area for work with high dose rate or contaminated items
- The service businesses continue expanding
 - Majority of RCA area is dedicated to byproduct work

◆ Former waste water line, keep in place

- Can not be excavated without significant destruction of the building possibly rendering it unusable (other SNM/uranium facilities)
- Pipe has residual contamination based on activity measured during remedial activities and historic use
- Wet Weather stream has been decommissioned

Decommissioning Continued

◆ Former waste water line, keep in place (cont)

- Pipe was flushed at the end of pelletizing operations to ensure no accumulation of significant SNM was in pipes
- System was used for water to be released at MPC (ppm) not bulk transfers
- Retention tanks and piping outside the fence have been removed
- Site only processed insoluble forms of uranium UO_2 and U_3O_8 so there is little chance of migration if the pipe leaked
- Short period of use and majority of discharge during pelletizing operations
- Favorable geometry in unlikely situation of an accumulation in pipe
- Depth of pipe below grade (1m to 4m)
- Limited contamination in removed sections by retention tanks
 - (0 to 1,600 dpm $\alpha/100\text{cm}^2$) (60 μg U/m) higher at collars

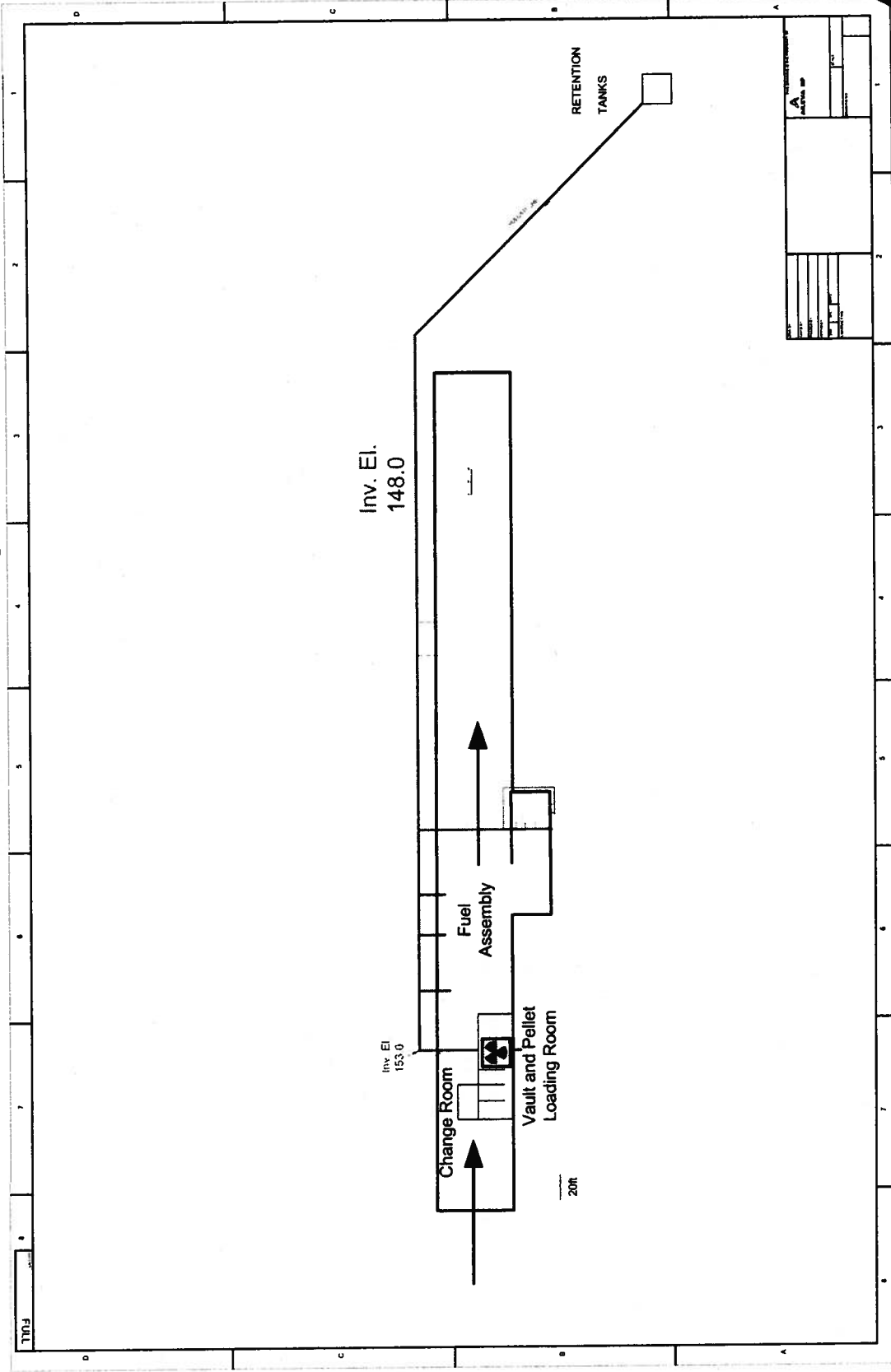
► Other Factors

- ◆ Residual special nuclear material does not present any radiological hazards greater than present under by-product license
- ◆ Likely that by-product material on site would interfere with final status surveys

Significant Historic Site Milestones

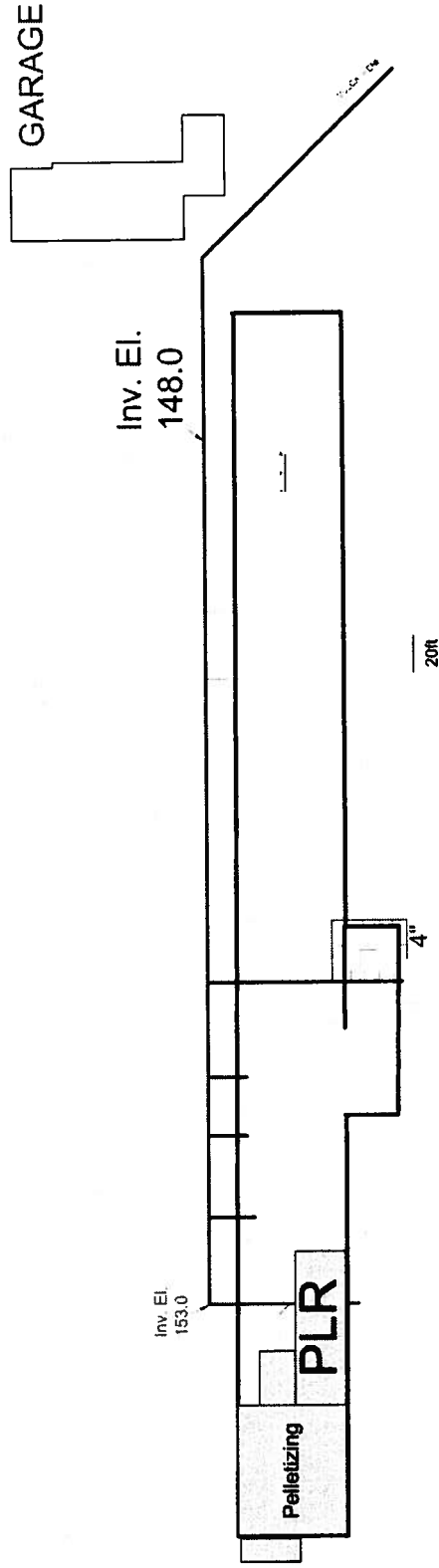
- ▶ 1968 Opening
- ▶ 1975 Pelletizing starts
- ▶ 1982-1983 Pelletizing ceases and powder area decontaminated
- ▶ 1990 – 1995 SERF-1 Fuel Field Services Operates By-product operation in fuel plant
- ▶ 1999 Wet weather stream is decommissioned
- ▶ 1990s – Present services business and work with By-product material expansion, SERF-3, SERF-4, SERF-5 and CMC
- ▶ 2009 Decision to move fuel manufacturing, other licensed operations remain
- ▶ 2011 Fuel manufacturing ends

Fuel Plant 1968

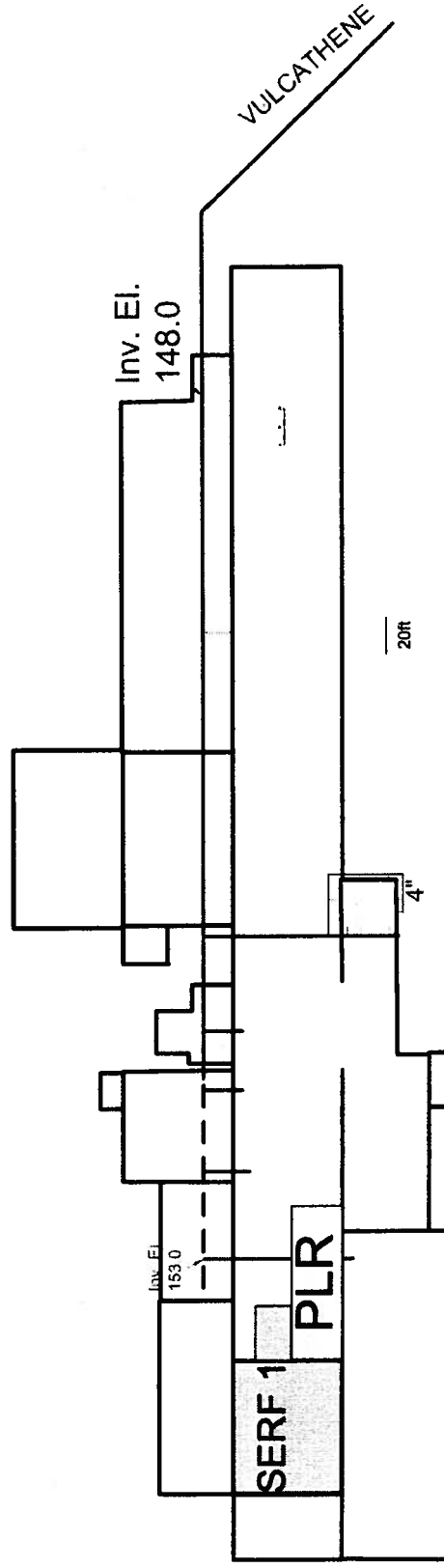


A
AREVA

Pelletizing Era 1975-1983



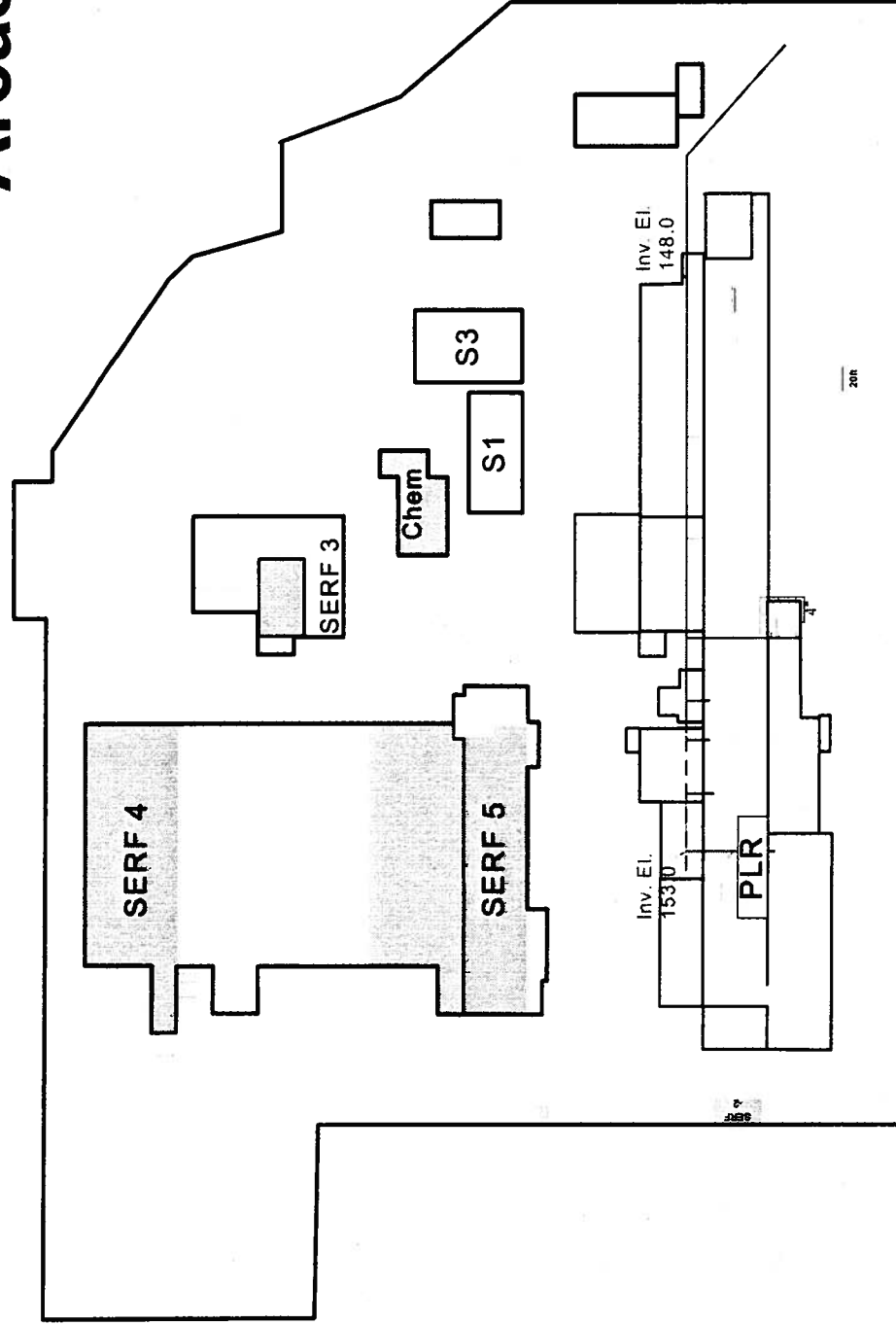
Former SERF-1 Byproduct Area 1990-1995



Line removal may require significant sections of building to be torn down

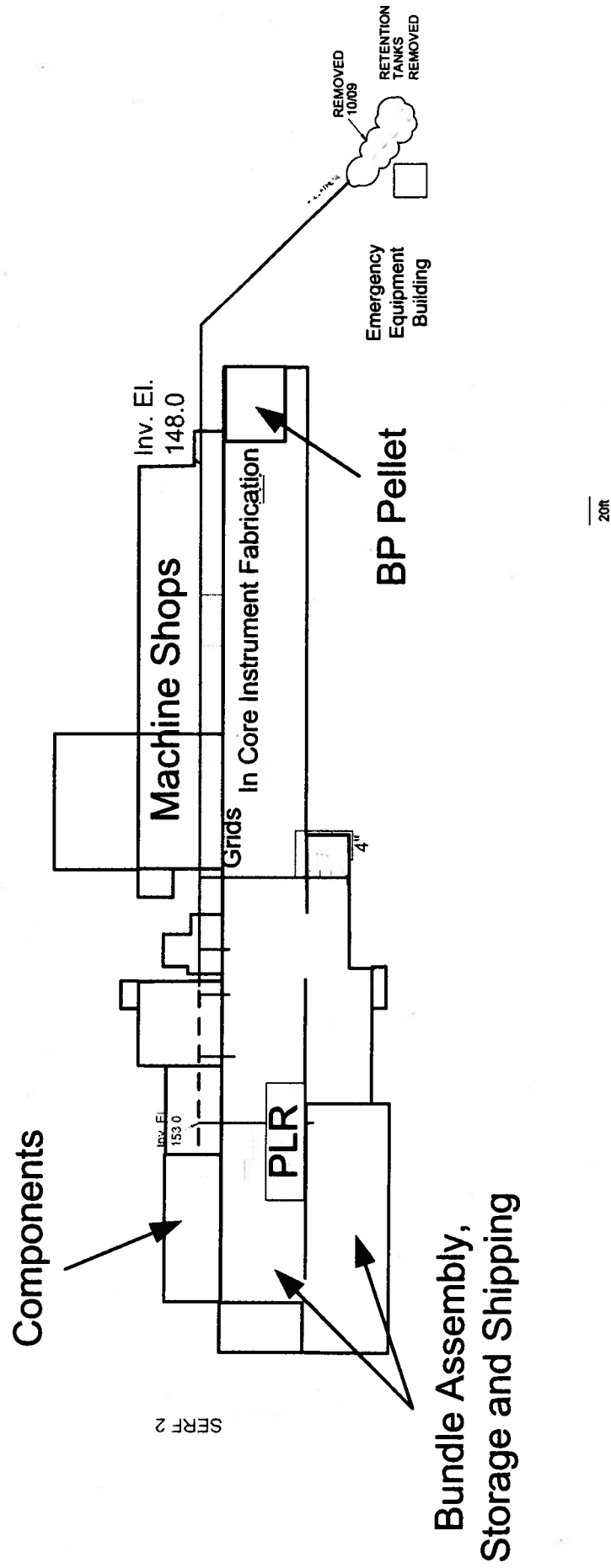
» Overlay on current facility

Current Radiological Control Areas

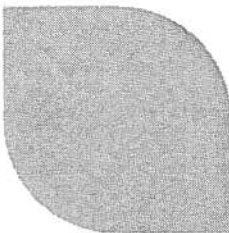


By-Product material activities contribute to the majority of the contamination control areas

Current Fuel Plant



Bundle Assembly,
Storage and Shipping



Nuclear Criticality Alarms System Termination

- **70.24(a) Criticality accident requirements**
 - Each licensee authorized to possess special nuclear material in a quantity exceeding 700 grams of contained uranium-235...each area in which such licensed special nuclear material is handled, used, or stored...
 - possession quantity <700 g
 - **ABB Windsor (buildings, pipes, burials)**
 - **LLRW disposal sites and 20.304 burials**

End State of Fuel Plant

- ▶ **Waste water line remains**
 - ◆ At the cessation of powder handling the lines were flushed
 - ◆ Residual contamination in the Vulcathene pipe
 - ◆ Wet weather stream decommissioned 1999
 - ◆ Sections outside fence removed in 2009
 - ◆ Leave in place (admin controls)
- ▶ **Pellet loading room**
 - ◆ Equipment removed (Richland or disposal)
 - ◆ All HEPA and Pre-filters removed and disposed from ventilation
 - ◆ Leave ventilation ducts and filter housing
 - ◆ Clean floor, clean walls
 - ◆ Survey and document
 - ◆ Maintain as contamination control area for by-product work
- ▶ **Minimum license or covered under by-product license**
 - ◆ FNMCP, IAEA, Security Plan, ISA summary updates etc. end
- ▶ **By-product operations continue**

License Fees

- ▶ **Currently 10 CFR171 fee schedule 1A(2)(a) limited operations**
 - ◆ **Annual fee is prorated based on fraction of the year**
 - ◆ **Reduce fee when rod loading is complete and pellet scrap is returned to Richland ~ February 2011**
 - Based on reduced regulatory effort (NRC matrix)
 - ◆ **Reduce Fee to zero when fuel bundles are shipped in July 2011**
 - ◆ **No fee if license is “contamination only” and other sources < 350 g U-235 transferred to State license**