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# Laying a Foundation for RP Excellence

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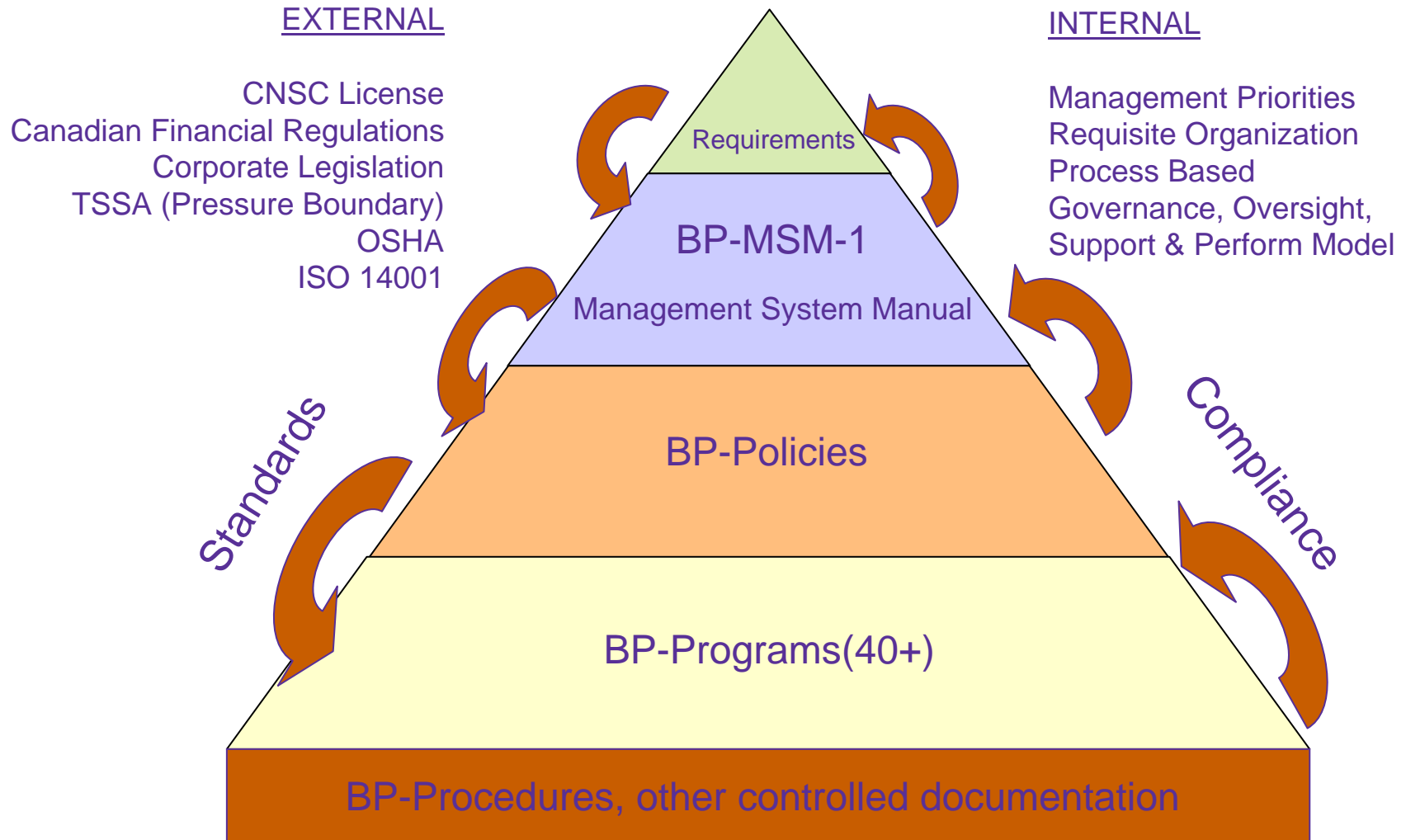
# Bruce Power

8 operating reactors on a 2300 acre site

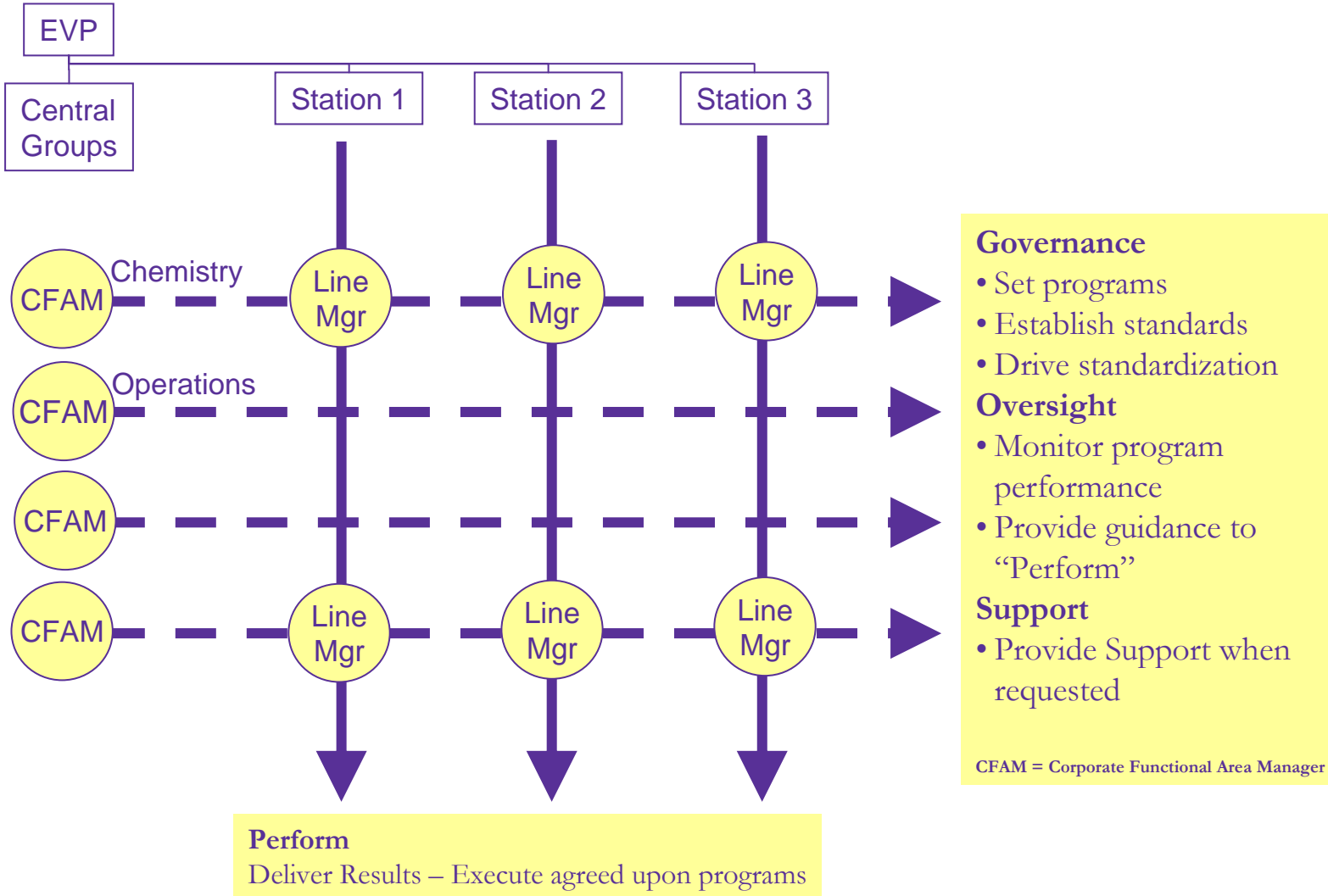
- 6 operating – Bruce B (4x1000 MW units), Bruce A (2 units)
- 2 units in refurbishment at BA
- 56 km of road
- Heavily unionised
- 5000-6000 staff and contractors at any time
- Operates like a small village
  - Own laundry, fire department, works department, medical clinic



# Document Hierarchy



# Bruce Power GOSP Philosophy



# Laying a Foundation for Excellence

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*“Almost all quality improvement  
comes via simplification”*

Tom Peters



# GOSP in Radiation Protection

- Site Functional Areas Manager (SFAM) for Radiation Protection at each reactor set and Corporate Functional Area Manager (CFAM) for Radiation Protection
- Peer group held every 2 weeks chaired by CFAM
  - Sets standards for radiation protection
  - Owns program documents and processes
  - Develops strategic, common policy for site
- Structure changed from one radiation protection group to different accountabilities
- Relationships and functions within the GOSP model are still developing



# Radiation Protection History

- In regulatory compliance, but poor RP performance compared to industry best
- High Collective Radiation Exposure
- Significant RP staff turnover and poor staff and union relations
- RP program document had not been updated since 2001 and based on model from 1970s
- Old zoning system based on model from plant build
  - Diluted RP standards
  - Aged and diverse monitoring equipment
- Had to make improvements, but deeply ingrained culture so knew impact had to be significant



# Strategic Vision for RP

- A strategic vision was developed by the CFAM for RP, accepted by senior management and short, intermediate and long term action plans created.
- Strategic vision addressed:
  - Organisation structure
  - Hiring, retention and development of staff
  - Union relationships
  - Plant layout, equipment and processes
  - Licensing and regulatory relationship
  - Documentation
- Significant changes have been made in short time



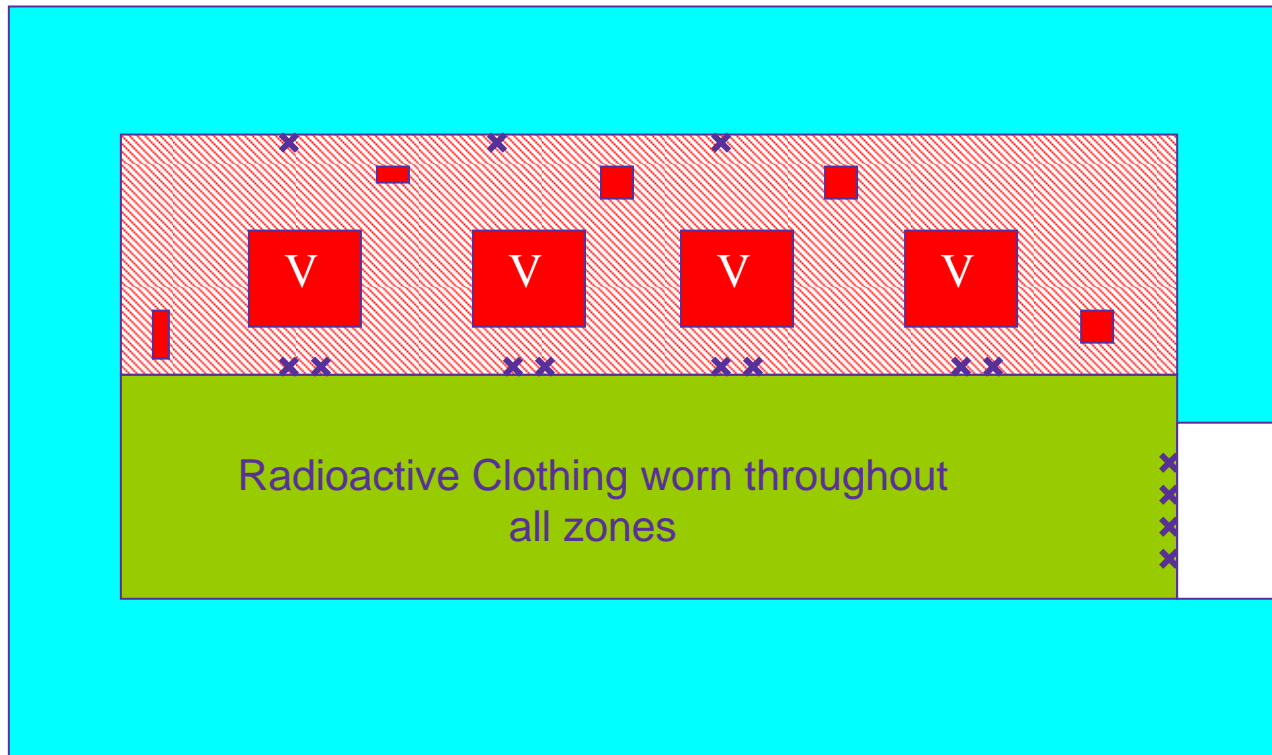


# Hiring, retention and development

- Lost large number of health physicists - junior HP staff
- Brought in HP mentors from outside the organisation.  
Mentors:
  - Provided one on one mentoring
  - Developed documented processes for HPs
  - Developed new SAT based training program for HPs
    - Experience
    - Self Study
    - Formal training
    - Field Check Out (23 modules)
- Has succeeded in providing right environment for staff
- Resolved long outstanding union grievance from staff



# Current Zoning System



 Rubber Areas/Vault (V)

 Zone 3



# Existing RPPE

“Browns” Ensemble



Men’s Radiation Underwear



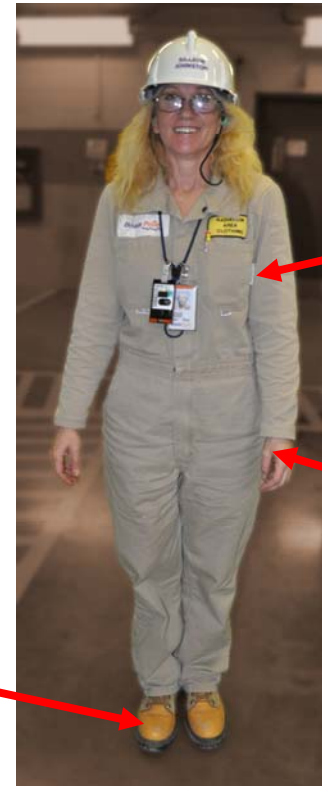
Rad Boots & Socks



“Rad Greens” Ensemble



“Khakis” Ensemble



Women’s Radiation Underwear

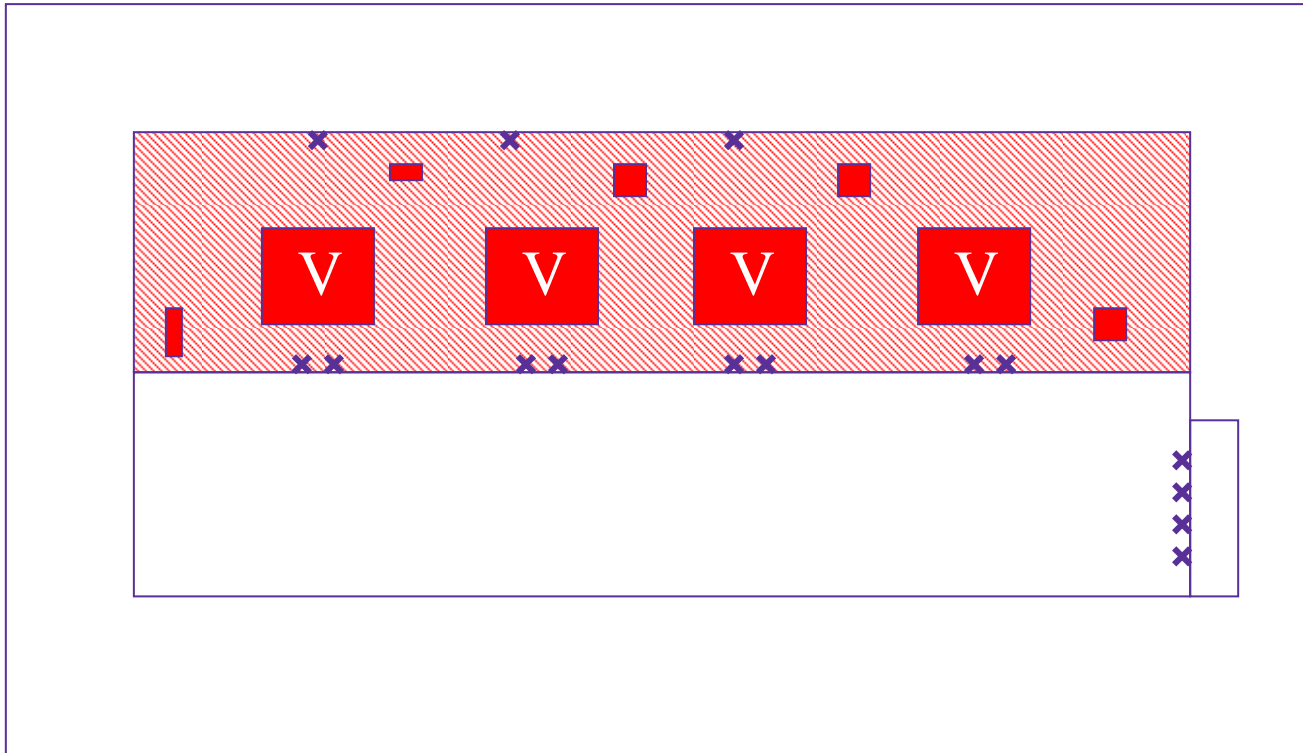





# Re-Zoning Strategy

- Developed new concept for zoning
- Created business case based on:
  - Life cycle management of existing instrumentation
  - Efficiency savings in changing PPE
  - Efficiency savings in getting to work
- Staged changes to allow acceptance of change
- Worked closely with union on PPE change
- Capital project for installation of equipment with dedicated project manager
- Use of dedicated contract resources to allow focus on major project



# New Re-zoning



-  Rubber Areas
-  RCA
-  Clean Area: no dosimetry, clean clothing



# Communications

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- Re-zoning has been the largest project ever undertaken on the site
- No-one had perceived possible for RP
- Early engagement of senior managers, affected departments, union and shop floor was key
- 23 means of communication used to identify, plan and roll out the change
  - New web-site, site wide teleconferences, substantial roll out package for supervisors, multi-media (TV, videos), mock ups, pamphlets, company newsletters, FAQs
- Change was smooth and effective



# Moving Onwards

- Expand strategic approach to work with other departments CFAMs to improve radiation protection
  - Chemistry, Fuel management, Maintenance, Operations
- Use lessons learned from re-zoning for other initiatives
  - Early involvement and communication is vital
  - Organisation resistance to change must be countered with effective communications and training – behaviours must adapt to change
- Top performing nuclear operators achieve outstanding, consistent results when they implement a management model and the GOSP accountability model

