

# Humboldt Bay Power Plant Unit 3 Decommissioning

## License Termination





# Objectives

- Initiate License Termination Plan (LTP) review process with the NRC
- Provide overview of path forward
  - Schedule
  - Issues/Concerns
- Methodology of Derived Concentration Guideline Levels (DCGLs)
- Final Status Survey (FSS) release criteria



# Site Description

- Humboldt Bay Power Plant (HBPP) Unit 3 a 220 MWt (65 Mwe) Boiling Water Reactor
- HBPP Unit 3 operated commercially from August 1963 until July 1976
- Unit 3 is on same site as the ISFSI, fossil Units 1 and 2 and recently completed 10 unit Humboldt Bay Generating Station (HBGS)



# Major Activities

- HBGS completed construction and startup (2010)
- Units 1 and 2 demolition (2010-2011)
- 60 Kv Switchyard (2012)
- Reactor vessel removal (2012)
- Removal and demolition of Unit 3 piping, components and structures (2010-2014)
- Site FSS (2015-2016)



# Keys to a Successful License Termination

- ⚙️ Apply “lessons learned” from previous LTP submittals
- ⚙️ Draw upon experience of HBPP personnel
- ⚙️ Maintain open dialogue early with the NRC and Stakeholders
- ⚙️ A strong foundation provides for a strong, defensible program



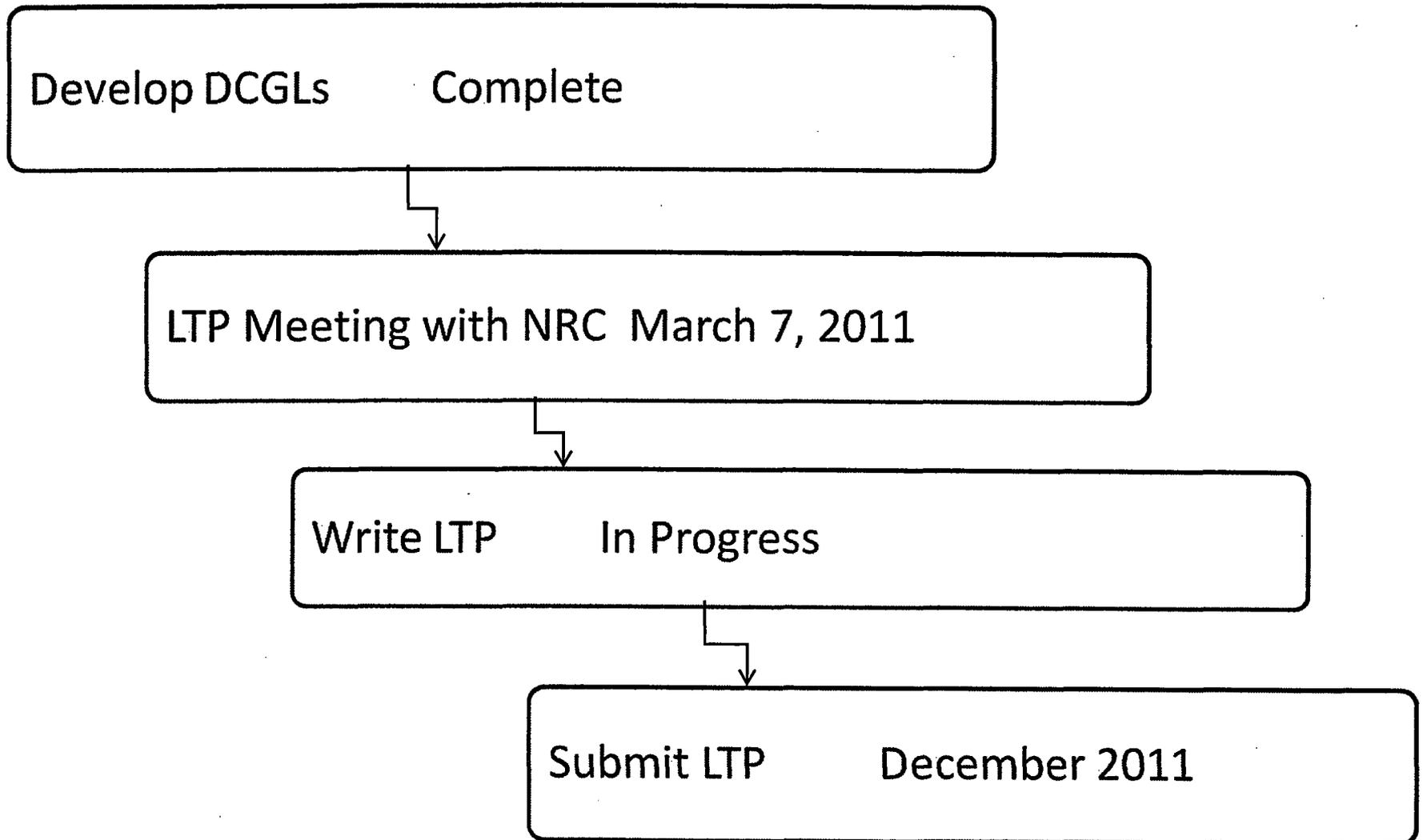
# Status of

# License Termination

- Historical Site Assessment (HSA) developed
- Performed characterizations
- Developed site specific DCGLs
- Develop and Submit LTP, License Amendment Request (LAR), HSA
  - Public Meeting
  - NRC Approval/License Amendment
- Develop FSS Program
- Perform FSS
- Submit Final Reports
- NRC Terminates License



# LTP Schedule





# Historical Site Assessment

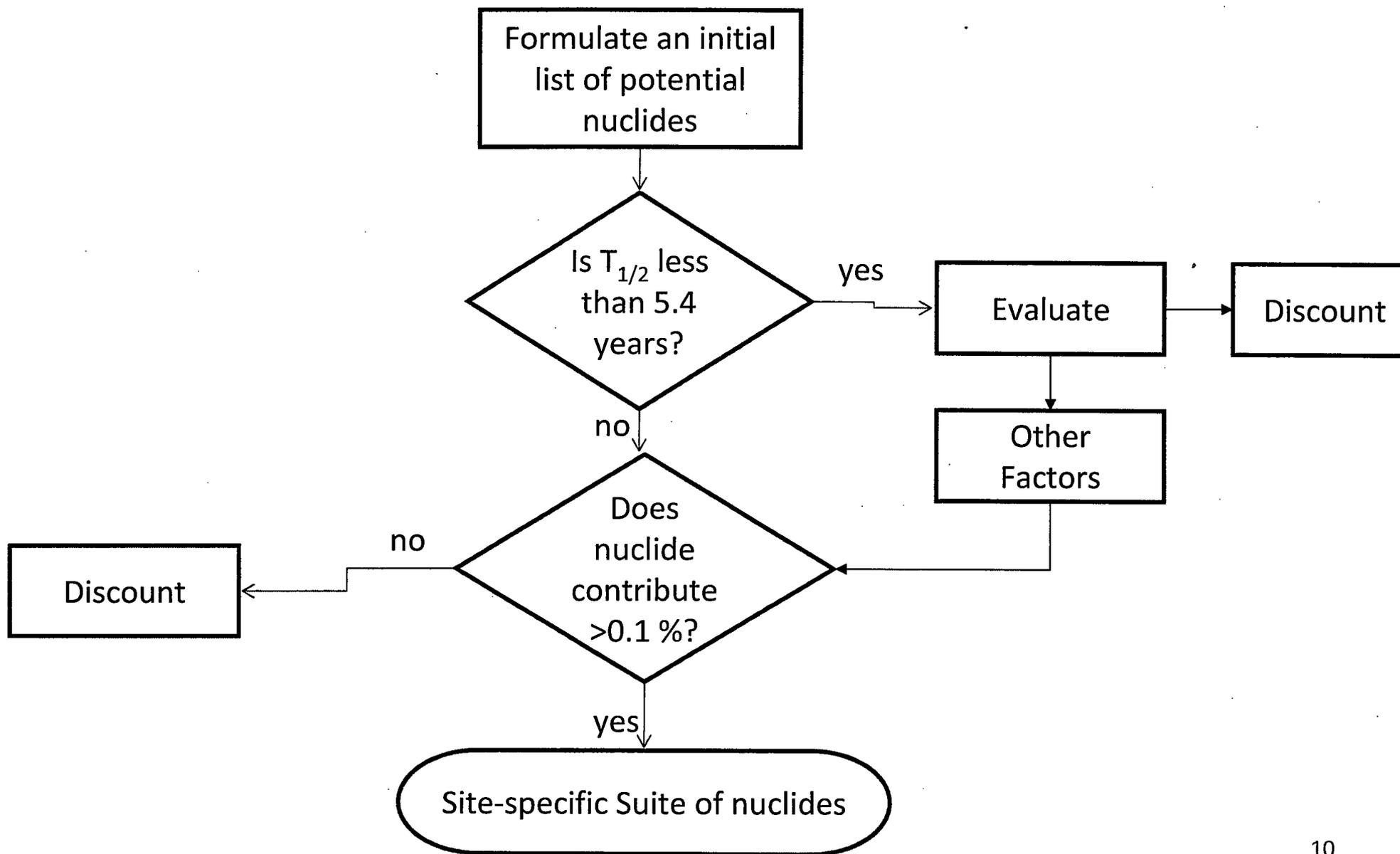
- Personal interviews of former HBPP personnel employed during Unit 3 operations
- Documents reviewed
  - Plant operating reports and logs
  - Licensee Event Reports
  - Construction and as-built drawings
  - Maps and photographs
  - Environmental and radiological characterization reports
- Submit with LTP



# Characterizations

- Characterization performed in 1997
  - MARSSIM based sampling survey
- A comprehensive characterization effort performed in 2007-2008
  - Surface scans and fixed-point measurements
  - Soil sampling and gamma walkovers
- Ongoing characterization of the site
  - Excavation soil sampling
  - Cross-Contamination Prevention & Monitoring Plan

# Nuclide Selection





# DCGLs

## Site-Specific Suite of Nuclides

H-3	I-129	Pu-241
C-14	Cs-137	Am-241
Ni-59	Eu-152	Cm-243
Co-60	Eu-154	Cm-244
Ni-63	Np-237	Cm-245
Sr-90	Pu-238	Cm-246
Nb-94	Pu-239	
Tc-99	Pu-240	



# DCGLs

- HBPP Unit 3 located on an industrial site co-located with electricity producing units (HBGS)
- Humboldt Bay site essential to electrical needs in the area
- No better site available in the region to locate generating stations
  - Infrastructure in place
  - Remote location
  - California Coastal Commission
  - Environmental impact
  - Active Switchyard
  - Transmission/Distribution
  - Natural Gas



# DCGLs

## Scenarios

- Building Surfaces
  - Industrial Worker
  - Parameters
- Soils
  - Industrial Worker
  - Parameters



# Develop FSS Program

- Develop HBPP Site-Specific FSS Procedures
- Develop Technical Basis Documents as necessary to support FSS effort
- Compile Survey Unit FSS Survey Packages for each Survey Area
- Identify final classifications for Survey Units
- Perform necessary reviews and approvals of FSS Survey Packages



# Perform FSS

- Take isolation and controls of units
- Perform FSS
- Perform any investigations
- Perform Data Quality Assessment (DQA) on data
- Formulate decision based on Data Quality Objectives (DQOs)
- Archive data



# Submit Final Reports

- Write “Pilot Report”
- Compile records when all Survey Units in a Survey Area complete
- Write and submit Final Report for each Survey Area
- Archive the report



# Future Interactions

- Teleconference Meetings
- Correspondence
- Public Meeting(s)

**NRC/PG&E MEETING  
MARCH 7, 2011**

**HUMBOLDT BAY POWER PLANT**

**ALTERNATE DISPOSAL  
EXEMPTION REQUEST**



# PURPOSE and AGENDA



- Discuss results of first exemption request
- Discuss proposed second exemption request

# FIRST EXEMPTION REQUEST



- April 1, 2010 – PG&E Submits Request for 200,000 cu. ft.
- July 16, 2010 – NRC Submits Questions
- July 29, 2010 – NRC/PG&E Public Meeting
- August 12, 2010 – PG&E Submits Revised Request
- November 2, 2010 – NRC Approves
- December 16, 2010 – State of Idaho Concurs

# FIRST EXEMPTION REQUEST



- Concentration Limits in First Exemption Request
- Actual Concentration Values (to date)

# SECOND EXEMPTION REQUEST



- Proposed for 2,000,000 cu. ft.
- Basis for Volume
- Similar to First Request
- Concentration Limits from First Request
- Isotope Concentrations Based on Actual Shipments/Disposal
- Dose Estimates for Second Request
- Submittal Expected in Mid-2011

# CONCLUSIONS



▣ Comments/Questions