SUA-1548

LICENSE RENEWAL

PRPOSED TECHNICAL REPORT OUTLINE

1.0. Proposed Activities
- 1.1. Licensing Action Requested
- 1.2. Project and Ownership History
  - 1.2.1. Project Ownership History
- 1.3. Location(s) of Facilities and Land Ownership
  - 1.3.1. Smith Ranch
    - 1.3.1.1. Location
    - 1.3.1.2. Land Ownership
  - 1.3.2. North Butte
    - 1.3.2.1. Location
    - 1.3.2.2. Land Ownership
  - 1.3.3. Ruth
    - 1.3.3.1. Location
    - 1.3.3.2. Land Ownership
  - 1.3.4. Gas Hills
    - 1.3.4.1. Location
    - 1.3.4.2. Land Ownership
- 1.4 Description of Existing Facilities and Processes (*This section could include a brief narrative of remaining reserves at SRH; historical production /operations; description of existing processing facilities, mine units, waste water disposal facilities; restoration/reclamation plans*)

DRAFT

2.0. Site Characterization and Description
- 2.1. Introduction
- 2.2. Smith Ranch Site
  - 2.2.1. Site Location and Layout
  - 2.2.2. Uses of Adjacent Lands and Waters
  - 2.2.3. Population Distribution
  - 2.2.4. Historic, Scenic and Cultural Resources
  - 2.2.5. Meteorology
  - 2.2.6. Geology and Seismology
  - 2.2.7. Hydrology
  - 2.2.8. Ecology
  - 2.2.9. Background Radiological Characteristics
  - 2.2.10. Background Non-Radiological Characteristics
- 2.3. North Butte Site
  - 2.3.1. Site Location and Layout
  - 2.3.2. Uses of Adjacent Lands and Waters
  - 2.3.3. Population Distribution
  - 2.3.4. Historic, Scenic and Cultural Resources
  - 2.3.5. Meteorology
  - 2.3.6. Geology and Seismology
  - 2.3.7. Hydrology

DRAFT

DRAFT

DRAFT

DRAFT

DRAFT

7.6. Socioeconomic Effects of Construction and Operation
    7.6.1. Increased State and Local Tax Base
    7.6.2. Creation of New Jobs
    7.6.3. Regional Productivity Increase
    7.6.4. Enhancement of Recreational Values and Wildlife Habitats
    7.6.5. Improvement of Local Roads or Other Transportation Facilities
    7.6.6. Other Effects
8.0. Alternatives to Proposed Action
    8.1. No Action Alternative
    8.2. Alternative Uranium Recovery Process Alternatives
    8.3. Alternative Uranium Extraction Processes
    8.4. Alternative Sites for Processing Facilities
    8.5. Alternative Energy Sources
    8.6. Alternative Lixiviant Chemistry
    8.7. Construction of a Central Processing Facility instead of Satellite facilities
    8.8. Ground Water Restoration Alternatives and Long Term Monitoring Techniques
    8.9. Alternative Monitoring and Waste Management Practices
9.0. Cost-Benefit Analysis
    9.1. General
    9.2. Quantifiable Costs and Benefits
10.0. Environmental Approvals and Consultations
11.0. References (*References can be provided at the end of the document or at the end of each major section)*

DRAFT

12.0. Other Requirements for License Renewals (*These items can either be a separate section of the TR or included within an existing appropriate section*)
    12.1. Provide historical record of site operations, including air and ground water quality monitoring, such as:
        12.1.1. NRC Inspection Reports and License Performance Reports
        12.1.2. Discussion of Amendments and Changes to Operating practices and Procedures
        12.1.3. Discussion of License Violations identified During NRC Site Inspections
        12.1.4. Discussion of Excursions, incident investigations or root cause analyses, and resultant cleanup histories or status
        12.1.5. Discussion of exceedence of any regulatory standard or license condition pertaining to radiation exposure, contamination or release limits
        12.1.6. Discussion of exceedence of any non-radiation contaminant exposure or release limit
        12.1.7. Discussion of updates and changes to any site characterization information that may impact the evaluation of exposure pathways and doses including site layout and location; uses of adjacent lands and waters; population distributions; meteorology; geology or hydrology; ecology; background radiological or non-radiological characteristics; or any other environmental features
        12.1.8. Discussion of environmental effects of operations including radiological and non-radiological effects, accidents and the economic and social effects of the operation
        12.1.9. Discussion of updates and changes that may cause reconsideration of alternatives to the proposed action

12.1.10. Discussion of updates and changes to economic costs and benefits for the operation since the last renewal
12.1.11. Discussion of the results and effectiveness of any mitigation proposed and implemented since the last renewal.

DRAFT

SUA-1548

LICENSE RENEWAL

PROPOSED ENVIRONMENTAL REPORT OUTLINE

1.0. Introduction to the Environmental Report
- 1.1. Purpose and Need for the Proposed Actions - *This section can be combined for all three sites as it defines the need for further resource development within the larger context of national uranium production and defines the context for the license renewal submittal.*
- 1.2. The Proposed Action
  - 1.2.1. Smith Ranch
  - 1.2.2. North Butte
  - 1.2.3. Ruth
  - 1.2.4. Gas Hills
- 1.3. Applicable Regulatory Requirements, Permits and Required Consultations

2.0. Alternatives
- 2.1. Detailed Description of Alternatives
- 2.2. No Action Alternative
- 2.3. Proposed Action - *This section includes all relevant information from both the Operations and Reclamation plans. Subsections including but not limited to; Site Location and General Project Description, Site Preparation Activities, Production Processes, Mine Unit Operation, Groundwater Restoration, Surface Reclamation and Decommissioning.*
  - 2.3.1. Smith Ranch
  - 2.3.2. North Butte
- 2.4. Reasonable Alternatives
- 2.5. Alternatives Considered but Eliminated
- 2.6. Cumulative Effects
- 2.7. Comparison of Predicted Environmental Impacts

NOTE: *The general structure of the Environmental Report follows closely with NEPA in the sense that the impacts associated with each resource (i.e. Socioeconomics, Water Resources or Visual Resources, Noise) compare the No Action Alternative, the Proposed Action and any Reasonable Alternatives. If the Reasonable Alternatives align between projects (Traditional Open Pit Mining, or Alternative Lixiviant Chemistry) the comparisons will be more simplistic throughout.*

3.0. Description of the Affected Environment
- 3.1. Land Use – *This section is site specific as it includes current land use, statements related to NRCS prime farmland, nearby areas of special land use designation, and mineral resources among others.*
  - 3.1.1. Smith Ranch Land Use
  - 3.1.2. North Butte Land Use
- 3.2. Transportation – This section is also site specific as transportation routes, corridor widths and any transportation restrictions will change depending on the site location.
  - 3.2.1. Smith Ranch Transportation
    - 3.2.1.1. Regional Transportation Corridors

DRAFT

DRAFT

3.7.1. Smith Ranch Noise

3.7.2. North Butte Noise

3.8. Historic and Cultural Resources – *This section is site specific as it requires local cultural resources surveys.*
- 3.8.1. Smith Ranch Historic and Cultural Resources
- 3.8.2. North Butte Historic and Cultural Resources

3.9. Visual and Scenic Resources – *This section is site specific as it requires local visual resources analysis.*
- 3.9.1. Smith Ranch Visual Resources
- 3.9.2. North Butte Visual Resources
- 3.9.3. Socioeconomics
- 3.9.4. Smith Ranch (Converse County)
  - 3.9.4.1. Population Characteristics
  - 3.9.4.2. Health and Social Services
  - 3.9.4.3. Economic Trends (Unemployment and Income)
  - 3.9.4.4. Tax Structure and Distribution
  - 3.9.4.5. Population Trends and Projections
- 3.9.5. North Butte (Campbell County)
  - 3.9.5.1. Population Characteristics
  - 3.9.5.2. Health and Social Services
  - 3.9.5.3. Economic Trends (Unemployment and Income)
  - 3.9.5.4. Tax Structure and Distribution
  - 3.9.5.5. Population Trends and Projections

DRAFT

3.10. Public and Occupational Health – Sections 3.11.1 through 3.11.4 are generic and can be written borrowing language from the GEIS, DOL statistics and published mortality studies.
- 3.10.1. Major Sources of Background Radiation Exposure
- 3.10.2. Major Sources of Chemical Exposure
- 3.10.3. Occupational Injury and Fatality Rates
- 3.10.4. Historical Exposures to Radioactive Materials
- 3.10.5. Summary of Health Effects Studies
- 3.10.6. Baseline Radiological Information
  - 3.10.6.1. Smith Ranch Historical Baseline Radiological Survey Results
  - 3.10.6.2. North Butte Historical Baseline Radiological Survey Results

3.11. Waste Management
- 3.11.1. Smith Ranch Processing and Satellite Facilities Waste Management
  - 3.11.1.1. Description of current waste systems
  - 3.11.1.2. Information on disposal methods and activities
  - 3.11.1.3. Identification of all sources of radioactive liquid, solid and gaseous waste materials
- 3.11.2. North Butte Satellite Facility Waste Management
  - 3.11.2.1. Description of current waste systems
  - 3.11.2.2. Information on disposal methods and activities
  - 3.11.2.3. Identification of all sources of radioactive liquid, solid and gaseous waste materials

4.0. Environmental Impacts – *This section describes the impacts from the operation(s) to each resource described in Section 3 above. Each alternative must be considered for direct, indirect and cumulative effects. Some of the impacts may be common to all sites and discussed together. Other impacts site-specific and require separate sections for each site.*

- 4.1. Land Use Impacts
- 4.2. Transportation Impacts
- 4.3. Geology and Soils Impacts
  - 4.3.1. Smith Ranch Geology and Soils Impacts
  - 4.3.2. North Butte Geology and Soils Impacts
- 4.4. Water Resources Impacts
  - 4.4.1. Smith Ranch Water Resources Impacts
  - 4.4.2. North Butte Water Resources Impacts
- 4.5. Ecological Resources Impacts
  - 4.5.1. Smith Ranch Ecological Resources Impacts
  - 4.5.2. North Butte Ecological Resources Impacts
- 4.6. Air Quality Impacts – *This section has historically been limited to impacts related to fugitive dust created from vehicle traffic travelling on unpaved roads.*
  - 4.6.1. Smith Ranch/Highland Air Quality Impacts
  - 4.6.2. North Butte Air Quality Impacts
- 4.7. Noise Impacts
  - 4.7.1. Smith Ranch Noise Impacts
  - 4.7.2. North Butte Noise Impacts
- 4.8. Historic and Cultural Resources Impacts
  - 4.8.1. Smith Ranch Historic and Cultural Resources Impacts
  - 4.8.2. North Butte Historic and Cultural Resources Impacts
- 4.9. Visual and Scenic Resources Impacts
  - 4.9.1. Smith Ranch Visual and Scenic Resources Impacts
  - 4.9.2. North Butte Visual and Scenic Resources Impacts
- 4.10. Socioeconomic Impacts
  - 4.10.1. Smith Ranch Socioeconomic Impacts
  - 4.10.2. North Butte Socioeconomic Impacts
- 4.11. Environmental Justice
  - 4.11.1. Smith Ranch Site
  - 4.11.2. North Butte Site
- 4.12. Public and Occupational Health Impacts
  - 4.12.1. Smith Ranch Public and Occupational Health Impacts
    - 4.12.1.1. Nonradiological Impacts
    - 4.12.1.2. Radiological Impacts
      - 4.12.1.2.1. Pathway Assessment
      - 4.12.1.2.2. Public and Occupational Exposure
  - 4.12.2. North Butte Public and Occupational Health Impacts
    - 4.12.2.1. Nonradiological Impacts
    - 4.12.2.2. Radiological Impacts
      - 4.12.2.2.1. Pathway Assessment
      - 4.12.2.2.2. Public and Occupational Exposure
- 4.13. Waste Management Impacts
  - 4.13.1. Smith Ranch Waste Management Impacts
  - 4.13.2. North Butte Waste Management Impacts

DRAFT

5.0. Mitigation Measures – *This section should include any and all mitigation measures, residual and unavoidable impacts and a comparison of what would be different for each of the reasonable alternatives.*
- 5.1. Smith Ranch Mitigation Measures
- 5.2. North Butte Mitigation Measures
- 5.3. Environmental Measurements and Monitoring Programs
  - 5.3.1. Radiological Monitoring
    - 5.3.1.1. Preoperational Gamma Surveys
    - 5.3.1.2. Soil Sampling
    - 5.3.1.3. Sediment Sampling
    - 5.3.1.4. Vegetation Sampling
    - 5.3.1.5. Surface Water Sampling
    - 5.3.1.6. Ground Water Monitoring
    - 5.3.1.7. Ambient Gamma and Radon Monitoring
    - 5.3.1.8. Air Particulate Monitoring
    - 5.3.1.9. Radon Flux Measurements
  - 5.3.2. Physiochemical Monitoring
    - 5.3.2.1. Ground Water Sampling
      - 5.3.2.1.1. Mine Unit Baseline Sampling
      - 5.3.2.1.2. Monitor well Baseline Water Quality
      - 5.3.2.1.3. Mine Unit Hydrologic Data Package
  - 5.3.3. Ecological Monitoring
    - 5.3.3.1. Wildlife
      - 5.3.3.1.1. Smith Ranch
      - 5.3.3.1.2. North Butte
    - 5.3.3.2. Onsite Meteorological Monitoring
      - 5.3.3.2.1. Smith Ranch
      - 5.3.3.2.2. North Butte

DRAFT

6.0. Cost Benefit Analysis
- 6.1. Introduction
- 6.2. Alternatives and Assumptions
  - 6.2.1. Alternatives
    - 6.2.1.1. No Action Alternative
    - 6.2.1.2. Proposed Action
  - 6.2.2. Key Assumptions
    - 6.2.2.1. Operating Life
    - 6.2.2.2. Discount Rate
    - 6.2.2.3. Impact Scope
    - 6.2.2.4. Non-Monetary Impacts
- 6.3. Economic Benefits of Project Construction and Operation
  - 6.3.1. Local Employment
    - 6.3.1.1. Smith Ranch
    - 6.3.1.2. North Butte
  - 6.3.2. State and Local Tax Revenues
    - 6.3.2.1. Smith Ranch
    - 6.3.2.2. North Butte
- 6.4. External Costs of Project Construction and Operation
  - 6.4.1. Short Term External Costs
  - 6.4.2. Long Term External Costs
- 6.5. Summary of Environmental Consequences

DRAFT