Cumulative Impacts of Oil and Gas Development on the North Slope

Institutional Challenges: Managing Cumulative Effects of North Slope Oil and Gas Development

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History of Alaska’s North Slope Oil and Gas Development

- **1950’s** – early exploration in Naval Petroleum Reserve
  - Minimal environmental controls
  - Still ongoing damage and cleanup
- **1960’s** – Exploration, discovery of Prudhoe Bay
- **1970’s** – TransAlaska Oil Pipeline, West/East docks and waterflood projects
- **1980’s** – New field and major infrastructure development to the west, nearshore areas
- **1990’s** – Development of Badami field to the east, Northstar offshore project
- **2000 to present** – Development of Alpine field to the west
Current Development Today

Infrastructure
- Gravel Fill
- Pipelines

Unit Boundaries
- Kuparuk
- Prudhoe Bay

Infrastructure Data by Permission of BPXA and CPAI. For Internal Use Only.
Stakeholder concerns over geographic extent and pace of development

Congressional funding for NAS report
  - Study of development practices and effects
  - Hoped for outcome “clean bill of health”

Intended and untended consequences
  - Industry is using best management practices
  - No one is comprehensively addressing certain issues, including cumulative effects

More easily said than done…
Challenges Addressing Cumulative Effects

Multiple Jurisdictions

- Multiple Federal/State/Local Jurisdictions
  - **Federal** – multiple leasing, NEPA, permitting, and consultation platforms…. MMS, BLM, ACOE, USFWS
  - **State** – separate development/protection mandates, leasing, and Best Interest Finding platform instead of NEPA
  - **Local** – planning and zoning powers, emphasis on cultural and resource protection

- Different standards, regulatory focus, expectations
- Uncoordinated, duplicative, and conflicting efforts
Challenges Addressing Cumulative Effects

Multiple Stakeholders

- **Industry**
  - Big, small, experienced, new players

- **NGO’s**
  - Pro-development
  - Environmental (consensus vs confrontation)

- **North Slope Residents**
  - Villages
  - ANCSA corporations
  - Tribal governments
Challenges Addressing Cumulative Effects

Natural and Social Changes

- Global warming/climate changes
  - Less sea ice, melting permafrost
  - Vegetative, fish/wildlife distribution

- Increased revenue
  - Improved quality of life, employment

- Increased social/cultural disruption
  - Human health concerns
  - Cultural practice, sense of place loss

- Difficult to attribute cause and effect
Challenges Addressing Cumulative Effects

**CE Process and Timing**

- Analysis occurs at different levels
  - plan, lease sale, and individual project
  - CE analysis not done by the State
- Analysis is action specific, not regional
- Inadequate or inconsistent baseline studies
- No common research or data repository
- Little monitoring or revisiting of impacts
- Minimal cumulative effects mitigation
  - Broad damage payments
  - Conflict avoidance agreements
- Perceptions/fears vs projections/facts
Regulatory requirement for Cumulative Effects analysis

Requires public process, legal accountability

Requires a “hard look”, disclosure of impacts

Requires looking at the effects of past, present, and reasonably foreseeable future actions
NEPA: Murky Guidance, Somber Outlook

- Implications of relative contribution of individual action to cumulative effects
- Mitigation obligations
- Measures/standards of significant impacts
- Significance Thresholds
  - What happens when a project crosses a threshold
  - What happens when a threshold is already crossed
- Obligation to monitor effects and adaptive management
- Equity in shouldering the analysis, mitigating impacts
Cumulative Effects: Suggestions and Solutions

- Address CE Regionally and Programmatically
  - World financial institutions, many nations moving this direction
  - Provide a baseline that can be updated
  - Action-specific NEPA can tier subsequent analysis

- Create a common platform/universe of past, present, and regionally foreseeable future effects
  - Common analytical comparison between agencies
  - Action-specific NEPA can tier subsequent analysis
Cumulative Effects:
Suggestions and Solutions

- Develop common criteria and standards
  - VECs – valued ecosystem and social components
  - Significance standards and thresholds
- More, focused baseline research and monitoring
  - ID sensitive areas, control areas before development
  - Consistent, funded monitoring
  - Look back review – what happened what didn’t
Cumulative Effects: Suggestions and Solutions

- A serious, documented approach to adaptive management
  - Prescribed milestones for reassessment
  - Stakeholder involvement
  - May increase of decrease mitigation

- Continued reduction of development footprint
  - Smaller pads, shared facilities
  - Sharing research and data collection
Cumulative Effects: Suggestions and Solutions

- Spread the burden of solutions
  - Baseline research, technological innovation, mitigation
  - Public, private, and non-profit funding
- Investigate appropriate modeling and predictive impact systems
  - One size does not fit all
- Involve the stakeholders
  - Design forums for solutions, not griping