



Public Safety and Sour Gas Implementation Plans:

First Progress Report

April 24, 2001

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Introduction

In December 2000, the Provincial Advisory Committee on Public Safety and Sour Gas presented its final report and recommendations to the Alberta Energy and Utilities Board (EUB). Shortly thereafter, the EUB announced that it would act on the 87 recommendations made by the Committee and that it had formed an Implementation Team to plan and coordinate the required work.

The Committee's extensive recommendations touch upon many aspects of sour gas development that are important to Albertans including health effects and research, development planning and approval processes, regulation of sour gas operations and emergency preparedness, and information, communication and consultation. The number of recommendations and their broad scope preclude complete implementation within the first year. The EUB currently expects action on all 87 recommendations to be initiated over the next three years.

This first report outlines the plan for proposed actions and schedules that will guide the work on 50 of the 87 recommendations planned to commence during the current EUB fiscal year, April 1, 2001 to March 31, 2002. Implementation of some will be completed within this period but others will continue into the second and third years of the plan. For many, additional on-going work will continue into the future as a result of changes to processes.

Since receiving the Committee's report in December 2000, the Implementation Team has consulted extensively within the EUB and with Alberta Health and Wellness, Alberta Environment, Alberta Municipal Affairs, and Alberta Innovation and Science to ensure a clear understanding of the intent of each recommendation, to develop proposed actions and schedules, and to weigh the relative priority of the recommendations. Recommendations have been selected for action in the first year for one or more of the following reasons: they are viewed as addressing issues that are fundamental to public safety; they are connected to work that is already underway; or their results are necessary inputs for other recommendations that will commence subsequently. Remaining recommendations will be included for action in either the second or third years of this multi-year plan based on a similar assessment. The Implementation Team will prepare and release a similar plan of work for the second and third years of implementation prior to that work beginning.

In reviewing the details of this plan, readers will find a statement of intent for each recommendation (or grouping) as well as proposed actions that would be undertaken to achieve the intended results. The statement of intent represents the EUB's interpretation of the Committee's recommendation. It is critically important to successful implementation that the intent is accurately stated, therefore feedback is encouraged. The proposed actions are in some cases general and strategic in nature, and will be further defined as projects move forward with appropriate stakeholder involvement. The Implementation Team welcomes feedback from readers of this plan, Advisory Committee members, and all other stakeholders on the statements of intent and proposed actions. Feedback will be considered in further development of actions and work plans for specific initiatives as they proceed.

It is important to note that work is already underway, either since receiving the Committee's report or previously, that addresses a number of the recommendations. Also, a small number of the recommendations are completed.

Background

In January 2000, the EUB established the Provincial Advisory Committee on Public Safety and Sour Gas. The 22-member multi-stakeholder Committee was asked to review the regulatory system for sour gas as it relates to public health and safety. Increasing interaction between the sour gas industry and the public has led to a dramatic escalation of public concern about safety and health effects of the sour gas industry.

The Committee consulted with more than 1600 Albertans who reside in major sour gas development areas in the province through public outreach sessions, written submissions and telephone surveys to listen first hand to their issues. Throughout the year, the Committee analyzed the input it received and, in October, conducted a second round of public consultations to obtain feedback on its findings, analysis and general recommendations.

In December, the Committee completed its work with its final report to the EUB. The report contains 87 specific recommendations directed toward improving understanding of sour gas, improving regulatory processes under which sour gas development is approved and operates, reducing impacts of sour gas on public health and safety, and improving consultation with the public on all sour gas matters.

The Committee requested that the EUB develop a plan to implement all of its recommendations, to make that plan public and to report quarterly on implementation progress. The Committee recognized that some of the recommendations would require action by others, but requested that the EUB also be responsible to include those in its implementation planning and progress reporting. The Committee will meet annually to assess and comment on the year's implementation progress.

First Year Implementation

This plan establishes the schedule for work to commence on 50 of the 87 recommendations of the Committee. Most of the recommendations and their proposed actions stand alone as separate initiatives, although many of the recommendations are interrelated and in some cases, dependent upon one or more other recommendations. A number of the recommendations however, are so closely related that for practical purposes, they have been grouped together as a single initiative, with proposed actions designed to achieve the overall intent. Because of this grouping, the first year plan shows that work will begin on 35 projects.

Included in this report are the proposed work plans for each of the recommendations or groupings included in the first year plan and a detailed work schedule. Details include the interpreted statement of intent of the recommendation, proposed actions and stakeholders who will be expected to have some involvement. The EUB recognizes the importance of measuring whether its proposed implementation actions actually achieve the intended result and acknowledges the comments of the Committee with respect to the need for measurement of results. Preliminary work to develop appropriate measures for each recommendation has begun, but further refinement is required, in most cases as the work on the proposed actions unfolds. Performance measures for the first year recommendations are not included in this plan but will be included in future progress reports as they become available.

Recommendations Completed

Recommendation 28 – EUB give highest priority to sour gas complaints. The EUB currently investigates all sour gas complaints immediately advises complainants of results of investigations. Follow-up resident visits are conducted when requested by the complainant. Also, random telephone surveys of complainants are conducted to gauge overall satisfaction with response by the EUB and industry.

Recommendation 29 – EUB field staff involvement in landowner-operator discussions and multi-stakeholder groups. Field staff will continue to be involved with synergy groups including promoting the formation of new groups. EUB open houses and participation in industry open houses will also continue, as will involvement in resolving landowner/operator issues.

Recommendation 35 – Pre-licence review of critical well licence applications. The EUB changed its critical well licence review process in October 2000 through changes to its Energy Development Applications Guide G-56. All critical well licence applications must now be designated non-routine and are reviewed in detail prior to issuance of the well licence. Previously, critical well licence applications could be submitted as routine, and approved prior to the detailed review of the application information (that review would occur afterward through the audit process). The EUB Applications Branch intends to further review its application review processes for sour wells, pipelines and facilities to ensure that a thorough assessment of these applications occurs.

Recommendations Already Substantially Underway

Recommendations 32 and 33 – Project and area planning information requirements for well licence applications. The EUB has explored this concept with operators and community stakeholders in three separate areas where energy development has been occurring in the past two years. The EUB will build on this experience and consult broadly with stakeholders to develop application information requirements and protocols for their use.

Recommendation 37 – Increased EUB effort in mediation. In January 2001, the EUB issued Informational Letter IL 2001-1 on the subject of Appropriate Dispute Resolution. In that IL, the EUB set out new expectations of the industry with respect to resolving application concerns with the public through alternative means to the traditional public hearing process. As part of this direction, the EUB acknowledged its increased role in facilitating the resolution of issues between the industry and landowners. To satisfy this role, the EUB has embarked on an ambitious program of facilitation and mediation training, with 100 staff trained to date and a further 122 scheduled for training this year. Additionally, the EUB has developed an industry-training program to be delivered through the Canadian Association of Petroleum Landmen. EUB staff have participated in some 160 facilitation cases since April 2000, of which 92 were satisfactorily resolved. Continuing effort in this area will be focused on additional training and workshops and on developing and implementing performance measures and reporting.

Recommendations 54, 60 and 61 – Interim requirements for review of emergency response plans and requests for reduced emergency planning zones. Drafting of clarified requirements that would remain in effect until detailed reviews of the methodology for determining emergency planning zones occur is nearly complete. The EUB will circulate the draft requirements to stakeholders for feedback before finalizing.

Recommendations 57 and 64 – New EUB emergency response plan guide and clarified responder roles. Stakeholder consultation had occurred and content for the emergency response plan guide was well under development prior to the work of the Committee and its resulting recommendations. The EUB will assess the guide content to ensure that the intent of relevant Committee recommendations is captured as work on this is completed. Further stakeholder involvement will take place prior to completion.

Recommendations 72 and 81 – Develop brochures on the role of the EUB and guiding questions for landowners to ask of energy developers. The EUB has updated and revised its brochure guide on the role of the EUB and is in the final stages of preparing it for publication. Development of questions for the public to ask prospective energy developers is complete in draft form and will be released for stakeholder input before being finalized in the form of a brochure for distribution.

Year 1 Initiatives

Following are the specific initiatives that will be started over the next 12 months. Scheduled start and end times for each are shown on the attached figure.

Health Effects and Sour Gas Research

- Update Health Effects Table (Rec #9)
- Develop H₂S Research Strategy (Rec #10 and 11)
- Establish Coordinated, Consistent Medical Response to H₂S Exposure Cases (#12)
- Develop SO₂ Health Effects Knowledge and Evacuation Criteria (Rec #59)
- Develop Personal H₂S Exposure Monitors (Rec #67)

Sour Gas Development Planning and Approval

- Investigate Coordination of Surface/Subsurface Planning Processes (Rec #5)
- Apply Sour Gas Plant Proliferation Policy (Rec #6)
- Establish Requirements to Promote Use of Existing Infrastructure (Rec #7)
- Standardize Dispersion Model and Risk Assessment Methodology (Rec #17, 18, and 19)
- Establish Area/Project Plan Requirements for Well Licence Applications (Rec #32 and 33)
- Establish EUB/Government Coordinated Application Review Process (Rec #34)
- Establish Training/Certification Requirements for Well Licence Applications (Rec #36)

Sour Gas Operations

- Take steps to safeguard against third party damage to sour pipelines (Rec #22)
- Increase Inspections of Sour Gas Operations (Rec #25)
- Increase Inspections of New and Non-Compliant Operators (Rec #26)
- Achieve 100% Inspection Rate for Critical Wells Near People (Rec #27)
- Enhance EUB Monitoring Capability for Complaints and Compliance (Rec #68)
- Complaint/Incident Response Programs for Aboriginal Communities (Rec #85)

Emergency Preparedness

- Establish Protocols for Follow-up on Major Sour Gas Releases (Rec #15)
- Develop Interim Policy for Review of ERPs and Reduced EPZs (Rec #54, 60 and 61)
- Establish Process to Validate and Test ERP Implementation Capability (Rec #55 and 56)
- Develop ERP Guide and Clarify Responder Roles (Rec #57 and 64)
- Establish Requirements to Encourage Mutual Aid Agreements (Rec #63)
- Ensure Emergency Preparedness Infrastructure for Aboriginal Communities (Rec #87)

Information, Communication and Consultation

- Enhance EUB Sour Gas Data Quality and Access (Rec #16)
- Increase EUB Effort in Mediation (Rec #37)
- Enhance User-Friendliness of Hearing Process and Update Public Hearing Guide (Rec #39, 40)
- Take actions which lead to improvement of public perception of EUB's neutrality and improvement in understanding of EUB role in protection of public health and safety (Rec #45, 46, 47 and 48)
- Establish EUB Resource Team to Facilitate Improved Public Consultation (Rec #69, 70 and 74)
- Develop Brochure on EUB Role/Contacts and Public Question Guide (Rec #72 and 81)
- Establish EUB Information Office (Rec #73)
- Initiate a study to determine local benefits of sour gas development (Rec #79)

Year 1 Plan Summary

This implementation plan for the first year (April 2001 – March 2002) will see work underway on projects to address 50 of the Committee's recommendations.

- Work on 3 recommendations is complete.
- Work on 10 recommendations is currently underway
- Work on 37 more recommendations will start during 2001

Of the 50 recommendations started, the schedule calls for implementation of 29 to be complete by March 31, 2002. Work on the remaining 21 will continue into the next implementation year.

Future Progress Reporting

As requested by the Committee and agreed to by the EUB, progress on implementation will be reported quarterly. In July 2001, the EUB will report the status of work completed on the projects currently underway, as well as on those starting during 2Q2001.

Comments

If you would like to provide feedback to this plan, e-mail use at: eub.publicsafety@gov.ab.ca or call any of the Public Safety Implementation Team members:

Harry Lillo	403-297-3721
Brad Hubbard	403-297-8502
Marilyn Craig	403-297-3194

Public Safety and Sour Gas Implementation Plan: Proposed Schedule

Emergency Preparedness	2001				2002				2003				2004
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
#15 Followup on Major Releases													
#54, 60, 61 Interim Policy on ERP Review and Reduced EPZ's													
#55, 56 Assess Capability to Implement ERP and Increase ERP Audit/Tests													
#57, 64 ERP Guide and Requirements to Coordinate Responder Roles													
#63 Encourage Use of Mutual Aid Agreements													
#87 Infrastructure/Resources for Aboriginal Community Emergency Response													

Information, Communication & Consultation	2001				2002				2003				2004
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
#16 Review, Organize and Enhance Access to EUB Data													
#29 Field Staff in Industry-Landowner Discussions													
#37 EUB Involvement in Mediation of Application Issues													
#69, 70, 74 Establish EUB Public Consultation Staff Resource Team													
#72, 81 Public Consultation Materials - EUB Role & Suggested Questions													
#73 Establish EUB Information Office													
#79 Determine Local Benefits From Sour Gas Development													
#45, 46, 47, 48 Perception of EUB's Neutrality													

Health Effects & Sour Gas Research

	2001				2002				2003				2004
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
#9 Health Effects Information for H2S and SO2													
#10, 11 Develop Sour Gas Research Strategies													
#12 Establish Coordinated, Consistent Medical Response to H2S Exposure													
#59 Develop SO2 Evacuation Criteria and Requirements													
#67 Develop Personal H2S Exposure Monitors													

Sour Gas Development Planning & Approval

	2001				2002				2003				2004
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
#5 Task Force Investigation of Improved Surface/Subsurface Planning													
#6 Plant Proliferation													
#7 Require Applicants to Consider Use of Existing Infrastructure													
#17, 18, 19 Standardize Dispersion and Risk Assessment Modelling													
#32, 33 Well Licence Apps Require Area/Project Plans													
#34 EUB/Gov't/Agency Coordinated Policy and Application Review													
#35 Critical Well Pre-Licence Review													
#36 Licence Application Training/Certification Information Requirement													
#39, 40 Rewrite G-29 Hearing Process and Make Hearings User-Friendly													

Sour Gas Operations

	2001				2002				2003				2004
	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1
#22 Review Adequacy of 3rd Party Damage Prevention for Sour Pipelines													
#25 Increase Sour Gas Inspections													
#26 Increase Inspections of New and Non-Compliant Operators													
#27 Implement 100% Inspection Rate for Critical Wells Near People													
#28 Response to Sour Gas Complaints													
#68 Enhance EUB Capability to Monitor for Complaint Response/Compliance													
#85 Complaint/Incident Response Programs for Aboriginal Communities													

**ADVISORY COMMITTEE RECOMMENDATIONS
AND
PROPOSED IMPLEMENTATION ACTIONS
FOR YEAR 1**

April 2001

**Recommendations and Proposed Implementation
Actions Related to Health Effects and Sour Gas
Research**

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO HEALTH EFFECTS AND SOUR GAS RESEARCH

9. *The EUB work with Alberta Health and Wellness, regional health authorities, Alberta Environment, Alberta Human Resources, industry, and other stakeholders to ensure that comprehensive health effects information (qualitative and quantitative) is developed, as soon as practical due to its urgency. This information is needed to conduct the review of the approach to emergency response planning referred to in recommendation 58. The review should cover both the constituents of sour gas mixtures and the combustion products of sour gas, including SO₂, reduced sulphur compounds, and complex hydrocarbons. (Alberta Health and Wellness has committed to lead the review for H₂S.)*

Lead Agency / Branch

Alberta Health and Wellness

Intent

Develop as far as practical, scientifically based health effects data for use in review of emergency response planning. This would include:

- H₂S
- Sour gas mixtures
- Combustion products of sour gas

Proposed Actions

- Identify gaps in information.
- Recommend areas where updates are required.
- Recommend areas where research is necessary.

Stakeholders

EUB: Public Safety Implementation Team, Compliance and Operations Branch

External: Alberta Health and Wellness, Regional Health Authorities, Alberta Environment, Alberta Human Resources, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO HEALTH EFFECTS AND SOUR GAS RESEARCH

10. *The EUB, Alberta Health and Wellness, Alberta Environment, Alberta Agriculture Food and Rural Development, Alberta Research Council, regional health authorities, industry, and other interested parties including Alberta universities, jointly establish an independent Scientific Review and Advisory Committee to provide recommendations on required research programs related to sour gas and health. This should be an ongoing activity to ensure that the research activity supports best practices by all parties. Among the tasks of this committee would be to ensure recognition and thorough assessment of completed and ongoing studies and the dissemination of the information.*
11. *The EUB work with the Alberta Government to ensure financial support is available to address gaps in research respecting the health effects of sour gas. Such research should complement the multi-government Western Canada Study on Animal and Human Health Effects Associated with Exposure to Flare Emissions. This research study should review the current gaps in human health research to ensure the proposed study plan addresses the relevant issues.*

Lead Agency / Branch

Alberta Health and Wellness

Intent

Ensure that research related to sour gas and human health takes place.

Proposed Actions

- Review gaps in scientific information related to sour gas and human health.
- Make recommendations on research.
- Work through various stakeholders to secure funding for priority research needs.
- Monitor the results of the research and assure that the gaps are being met.

Stakeholders

EUB: Public Safety Implementation Team, Compliance and Operations Branch, Applications

External: Alberta Health and Wellness, Alberta Environment, Alberta Agriculture, Food and Rural Development, Alberta Research Council, Regional Health Authorities, Innovation and Science, Clean Air Strategic Alliance, Universities, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO HEALTH EFFECTS AND SOUR GAS RESEARCH

12. *Alberta Health and Wellness work with regional health authorities and physicians, through the Alberta Medical Association, to ensure a consistent, appropriate, and coordinated response to individuals exposed to major H₂S releases. This should be a 24-hour, seven-day-a-week response, possibly utilizing the Poison and Drug Information Service.*

Lead Agency / Branch

Alberta Health and Wellness

Intent

Provide a 24-hour, seven-day-a-week medical information response for individuals exposed to high doses of hydrogen sulphide. This service would be used by medical professionals in the treatment of H₂S exposure.

Proposed Actions

- Work with Alberta Health, Regional Health Authorities and the Alberta Medical Association to review the possibility of establishing response capability, likely through the Poison Control Centre.
- Ensure that information is current and updated when it becomes available.
- Determine if further equipment or research is needed for treatment (e.g., hyper baric oxygen chambers) or the ability to detect if the effect is from H₂S or other causes.

Stakeholders

EUB: Public Safety Implementation Team

External: Alberta Health and Wellness, Regional Health Authorities, Alberta Medical Association, Poison Control Centre

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO HEALTH EFFECTS AND SOUR GAS RESEARCH

59. *The EUB work with Alberta Health and Wellness, regional health authorities, and other stakeholders to develop clear requirements and evacuation criteria to address the hazard of SO₂ as a result of ignition.*

Lead Agency / Branch

Alberta Health and Wellness

Intent

Review and update SO₂ evacuation criteria.

Proposed Actions

- Review the SO₂ evacuation standards that are currently in place.
- Review SO₂ evacuation standards from other jurisdictions and organizations
- Make recommendations on the development of new standards for SO₂ evacuation to be incorporated into the emergency planning processes.

Stakeholders

EUB: Public Safety Implementation Team, Compliance and Operations Branch

External: Alberta Health and Wellness, Alberta Environment, Regional Health Authorities, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Universities

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO HEALTH EFFECTS AND SOUR GAS RESEARCH

67. *The EUB, with the assistance of industry and researchers, promote and support the development of exposure monitors that can be used to measure personal exposure of the public to sour gas-related substances in a practical manner. Guidelines would also be required as to the circumstances in which they should be used.*

Lead Agency / Branch

Alberta Health and Wellness

Intent

In order to address health concerns and issues and to expand knowledge of health effects, develop a reliable personal monitor capable of measuring low-level exposures to H₂S. Develop plans and protocols for how and when these monitors would be used, and how the data collected would be reported and used.

Proposed Actions

- Define purpose of the tool and assess whether existing tools are available.
- Identify gaps in current technology.
- Determine next steps for the development of an appropriate tool.
- Develop the tool.
- Develop the protocols for its use.

Stakeholders

EUB: Public Safety Implementation Team, Compliance and Operations Branch, Field Surveillance

External: Alberta Environment, Alberta Human Resources and Employment, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

**Recommendations and Proposed Implementation
Actions Related to Sour Gas Development Planning
and Approval**

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

5. *The immediate formation of a task force of senior decision makers that would investigate the possibility of improving coordination between subsurface and surface planning and development.* The task force should be empowered to look at all relevant aspects of planning and development, including the mineral leasing system, and should include appropriate representation from Alberta Resource Development, Alberta Municipal Affairs, Alberta Health and Wellness, Alberta Environment, the Alberta Energy and Utilities Board, Aboriginal groups, urban and rural municipalities, regional health authorities in sour gas areas and their associations, surface land developers, the public, and the oil and gas industry. The Task Force should investigate and consider, among other matters, the following:
- The development by the oil and gas industry, government, and urban and rural planning authorities of a complementary planning and development process. The Task Force might consider EUB Interim Directive (ID) 96-1 (regarding Hay-Zama Lake Complex – Special Requirements) as a useful precedent to assist in coordinating surface and subsurface development near populated areas, such as urban and seasonal recreational centres, as well as near First Nations and other Aboriginal lands.
 - The development of policies to ensure that sour gas reserves are delineated and recovered as soon as reasonably possible in populated areas (such as those identified in existing Inter-municipal Development Plans [IDP], designated fringe areas, or intensive transportation corridors), while still providing the industry with a reasonable opportunity to develop its mineral leases.
 - Where there are current land-use conflicts related to sour gas and public health and safety, the development of Land Use and Resource Development (LRD) Agreements by the surface and subsurface owners, relevant municipal planning authorities, and the EUB. These agreements could provide a workable solution for all parties involved in terms of development and timing. EUB Decision 2000-20, *Dynegy Canada Inc., Application for Pipeline Licence Amendments*, is an example of how these types of agreements could be used. This might be accomplished through effective public consultation processes.
 - The promotion of information exchange between industry, government, and Aboriginal people, regarding heritage (traditional lands and sacred sites), land-use planning, development, building, and emergency planning issues.
 - Possible changes to the mineral leasing system. These might include matters such as leasing larger blocks of common ownership for sour gas near population centres and warnings when smaller blocks are posted that common operations are preferred; qualification criteria to ensure that operators have the necessary risk management standards and resources to handle sour gas; and notification to potential bidders of possible restrictions on resource development (such as lease time limit) in areas within or adjacent to urban centres or where land-use conflicts are relatively near-term.
 - Possible restrictions on municipal development until the sour gas resources are recovered or building restrictions through land-use bylaws in areas where there is high potential for sour gas development.

- Possible modification to the existing membership of the Crown Mineral Disposition Review Committee to address the possible impacts of sour gas development on public health and safety.

Lead Agency / Branch

EUB - Public Safety Implementation Team

Intent

Reduce the immediate interface between large populations and sour gas developments, both geographically and in time, resulting in reduced conflict on an areal basis, between sour gas development infrastructure and land surface development through improved, longer-range, and cooperative planning of both activities.

Proposed Actions

- Establish a task force of senior decision-makers from Department of Resource Development, EUB, Municipal Affairs, Alberta Environment and Alberta Health and Wellness, with representatives of the oil and gas industry, the land development industry, urban and rural municipalities, and aboriginal groups to:
 - discuss and understand the issue (briefed on existing planning, leasing and approval processes administered by Department of Resource Development, EUB, Municipal Affairs etc.)
 - determine scope of potential solutions to achieve improvements and resulting benefits,
 - develop terms of reference for detailed analysis resulting in recommendations,
 - commit resources to working committee to undertake detailed analysis and make recommendations,
 - guide the working committee as needed,
 - decide on recommendations of working committee,
 - ensure implementation of recommendations as decided.
- A working committee with representation of the departments above and other stakeholders will examine present planning and approval processes for surface and subsurface and explore potential opportunities for improved planning and decision-making within the administrative frameworks of Department of Resource Development, Municipal Affairs, municipal planning bodies and the EUB and through negotiated land and resource development agreements. This group would report its findings and recommend improvements within the scope determined by the task force.
- Task Force decides on recommendations to be made to government regarding policy and legislative changes as necessary for implementation.

Stakeholders

EUB: Compliance and Operations Branch, Resources, Applications, Law

External: Department of Resources Development, Alberta Environment, Municipal Affairs, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, planning associations, representatives of land development industry, urban and rural municipality representatives, aboriginal community representative

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

6. *Adoption by the EUB of the recommendation that there be more rigid enforcement by the EUB of its gas plant proliferation policy as presented in the report recently submitted to the EUB by the Sulphur Recovery Guidelines Review Group. This Sulphur Recovery Guidelines Review report is available on the EUB's Web site at <www.eub.gov.ab.ca/bbs/products/reports/srgag-2000-04.pdf>.*

Lead Agency / Branch

EUB - Applications Branch

Intent

To ensure that the EUB rigidly enforces its sulphur recovery guidelines with respect to plant proliferation, by requiring proponents of new sour gas processing facilities to fully evaluate alternatives to new plants in every case in terms of environmental and public impacts before applying to the EUB and that the EUB ensures that new sour gas plants are justifiable in terms of need and minimizing adverse impacts of over-all sour gas development.

Proposed Actions

As part of developing the final recommendations to the Board and Alberta Environment decision makers for the sulphur recovery guidelines review, ensure sections on sour gas plant proliferation address the intent of the Public Safety and Sour Gas Committee.

The sulphur recovery guidelines review currently underway will result in updated sour gas plant proliferation requirements. This process has involved extensive stakeholder input opportunity and will be completed in 2Q2001. With the issuance of the Sulphur Recovery Guidelines Interim Directive, the following actions will be needed:

- Revise Guide 56 schedules, audit package requirements and appendices to clarify and update explanation and implementation of sour gas plant proliferation requirements.
- Develop and implement revisions to sour gas plant application up-front review and audit processes as required.

Stakeholders

EUB: Compliance and Operations Branch, Resources, Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

7. *Revisions to EUB guides to require operators to include in their applications for critical sour wells, pipelines, and facilities a review and discussion of options to utilize existing sour gas infrastructure in the area in order to minimize the extent to which the public is impacted by additional sour gas development. This would include both the applicant's facilities as well as other operators' facilities in an effort to reduce proliferation of well sites and sour gas pipeline infrastructure. Options may include consideration of directional drilling, target flexibility, and the establishment of pipeline corridors.*

Lead Agency / Branch

EUB - Applications Branch

Intent

Minimize the potential public health and safety impacts of infrastructure used to develop sour gas resources by ensuring that operators and the EUB evaluate use of existing sour gas infrastructure before new facilities are approved.

Proposed Actions

- With the sour gas plant proliferation policy discussed in recommendation #6 as the basis, develop proliferation guidelines for critical sour wells, production facilities and pipelines. Options to achieve this include:
 - EUB staff review the matter and prepare a draft guideline (“strawdog”) that could be posted for stakeholder feedback. Final guidelines would be recommended to the Board, based on input received.
 - Initiation of a multistakeholder team process to evaluate how the sour gas plant proliferation guidelines (Recommendation 6) should be modified to apply to other types of sour gas facilities.
- Review the applications process and revise Guide 56 schedules, audit package requirements and appendices to update explanation and implementation of sour gas proliferation requirements.
- Develop and implement revisions to sour facilities application review and audit processes as required to ensure proliferation is addressed.

Stakeholders

EUB: Compliance and Operations Branch, Corporate Support, Law, Resources

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public representatives

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

17. *The EUB, in cooperation with stakeholders, develop a framework and methodology for standardizing dispersion modeling and probabilistic risk assessment that will provide clarity to the industry and the public.* This would include review of existing models and defining a set of standard models and methods that will be accepted for evaluating health and safety exposure hazards and probabilistic risk from sour gas releases. Alberta Environment has developed a set of standard dispersion models for routine industrial releases that should be reviewed by the EUB.

The EUB should define the range of conditions for which each model is suited. A list of standard release, dispersion, and probabilistic risk models and a set of standardized scenarios of release rates, atmospheric conditions, and sour gas exposure effects should be made readily available by the EUB so that everyone has access to this information. These same models and methods should be suitable for assessing exposure close to the source, and evaluating policies for setbacks, emergency planning zones, and mitigation strategies, such as ignition and sheltering indoors. Where a non-standard approach to hazard or probabilistic risk modeling is brought forward by the industry or the public, the EUB should be responsible for bringing all parties together early in the process to discuss and resolve differences.

18. *The EUB require that users of sour gas hazard and probabilistic risk assessment techniques clearly state their methods and assumptions.* The sour gas hazard or probabilistic risk assessments should state the methods and assumptions in sufficient detail that a third party could duplicate the numerical results.
19. *The EUB be responsible for reviewing and updating its standard models and methods regularly.* As new techniques become available and are demonstrated to be superior, they should be adopted by the EUB. This responsibility would require the EUB to maintain the in-house expertise required to evaluate and adapt existing atmospheric dispersion and toxic risk models used by other agencies such as Alberta Environment, and other national and international agencies and researchers.

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Establish and maintain standardized criteria for the use of dispersion modeling and probabilistic risk assessment that would include input parameters, model methodologies and capabilities and acceptable conditions for use. This will increase public confidence and understanding by eliminating the considerable differences between experts on dispersion and risk predictions.

Proposed Actions

Consideration should be given to development of interim dispersion modeling and risk assessment protocols, followed by a more complete review. Steps for an interim protocol would involve:

- Develop an interim protocol for applying current models and risk data using a “Delphi” process with selected experts. This would include definition of default models and input data assumptions and could be done within six months. A Delphi process involves preparation of a draft protocol that would be provided to individual experts for comment. The comments would be collected and the draft revised. The experts would then be asked to comment on the updated draft. The steps can be repeated as needed until the experts are independently satisfied with the draft (possibly 2 iterations). This would address immediate needs for clearer protocols on modeling and risk assessment calculations and could be accomplished fairly quickly with limited resources.

A more complete follow-up process would involve the following:

- Establish steering committee of 3 – 4 key stakeholders to define objectives and act as an advisory/peer group.
- EUB staff will lead the project with outside technical expertise retained as needed.
- Review existing models and define a set of standard models and methods that will be adopted by EUB for evaluating health and safety exposure hazards and probabilistic risk from sour gas release.
 - Define range of conditions for which each model is suited,
 - Develop a list of standard release, dispersion, and probabilistic risk models and a set of standardized scenario of release rates, atmospheric conditions and sour gas exposure effects, and
 - Ensure model and methods are also suitable for assessing exposure close to source, and evaluating policies for setbacks, emergency planning zones, and mitigation strategies such as ignition and sheltering indoors.
- Develop requirements for submission of information on methods and assumptions used.
- Maintain in-house (EUB) expertise to continuously review and update methodologies.

Stakeholders

EUB: Applications

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Environment, independent experts

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

32. *The EUB support area planning among operators and require well applications to include at least general information regarding existing and possible future area plans where sour gas is involved near people.*
33. *For sour gas near people, the EUB require project plans as part of well applications where a well is part of a larger project of the applicant and encourage applications for more than one well and facility at one time where feasible.*

Lead Agency / Branch

EUB - Applications Branch

Intent

Require applicants to define and disclose at least conceptual information on existing and future development plans to the public and to the EUB to assist in the consultative and decision making processes.

Note: Project disclosure already is an expectation in the October 2000 version of Guide-56. The Guide currently addresses joint project filing of pipelines and facilities. Next steps will review how to incorporate wells.

Proposed Actions

- Define the appropriate level of development plans that would assist the public and regulators in understanding the potential scale of overall sour gas development at an initial application stage. Considerations would include determinations of reasonable expectation for conceptual development planning and competitive information confidentiality issues.
- Review the October 2000 revision of Guide 56 for completeness with respect to the foregoing to ensure the following requirements as a minimum are addressed for sour gas projects including wells:
 - disclosure of overall intent if an application is an element of a larger project;
 - documentation of larger project plan as part of public consultation and application audit materials; and
 - concurrent submission of related applications (e.g., acid gas injection well with related pipelines and compressors) where possible.
- Assess additional work needed in terms of required changes to Guide 56 and develop a work plan. With stakeholder input, develop appropriate modifications to Guide 56 and applications review processes.

Stakeholders

EUB: Resources, Compliance and Operations Branch, Field Surveillance, Corporate Support

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

34. *The EUB increase and improve coordination between itself and Alberta Environment, other involved government departments, and municipality and regional health officials. It should develop a system that provides for their involvement in relevant EUB policy making and, where applicable, for their early, efficient, and effective involvement in the review of applications dealing with sour gas and public health and safety. This matter is also dealt with in recommendations 1 and 2.*

Lead Agency / Branch

EUB - Applications Branch

Intent

Ensure that EUB processes for development of sour gas related requirements and review and approval of sour gas applications provide appropriately for disclosure and consultation with relevant Provincial and municipal agencies, as well as regional health authorities (RHAs) early in the process.

Proposed Actions

The EUB will identify the various organizations who may need to be included and consult with them to get their input into appropriate process.

- Review current procedures to identify other groups who may provide value to, or expect to be involved in, new policy development and sour gas project application processes.
 - As part of process, meet with agencies to determine their areas of interests and to define application disclosure and consultation protocols and timing requirements.
 - Assess impact of involvement expectations on application process timelines and staff work loads to determine feasible approaches to coordination.
- Modify application processes to provide for appropriate proponent disclosure and consultation with Alberta Environment, Regional Health Authorities and other Provincial and municipal agencies. This would include requirements for proponents to identify any related outstanding or unresolved issues in their applications to the EUB.

Stakeholders

EUB: Public Safety Implementation Team, Compliance and Operations, Law

External: Alberta Environment, Alberta Health, Regional Health Authorities, municipalities (through related associations or Municipal Affairs), Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

35. *The EUB carry out a more detailed staff review of critical sour well applications immediately upon their filing and before licensing of the well. In other words, there would be no “routine” designation for critical sour well applications. This recommendation has been adopted through a recent change to EUB policy.*

Lead Agency / Branch

EUB - Applications Branch

Intent

The EUB ensure that processes require thorough review of critical sour well applications against all requirements whether or not they are going to hearing, to make sure that all requirements are being met before approval.

The EUB will carry out its role (duty) to the public of Alberta to provide assurance that we have determined where regulatory oversight/review is required and defined how the EUB will implement that oversight/review.

Actions Taken – Recommendation Completed

The October 2000 revision to Guide 56 requires, all Category E (critical) sour facility applications including critical sour wells, to be submitted as non-routine and are therefore subject to staff review prior to approval. This essentially addresses recommendation 35, however, ongoing work will take place to further improve processes.

Stakeholders

EUB: Resources, Compliance and Operations, Field Surveillance, Law

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS DEVELOPMENT PLANNING AND APPROVAL

36. *The EUB require information in applications for critical sour wells that demonstrates how the applicant will ensure that involved employees will be trained and certified in accordance with the standards.*

Lead Agency / Branch

EUB - Applications Branch

Intent

Development of regulatory approaches that require and verify that qualified staff are responsible for drilling, completion and operation of critical sour wells.

Proposed Actions

Drilling and Completion:

- Information on training and experience is required in detailed drilling and servicing plans related to the drilling and completion of critical sour wells. There is also work underway under the auspices of Drilling and Completions Committee (DACC) to develop a new Industry Recommended Practice (IRP) on Minimum Qualifications for Wellsite Supervisors. These requirements will apply to all drilling operations.

Operations:

- With industry, Human Resources and Employment, Compliance and Operations Branch and Field Surveillance, identify what training and/or certification programs are relevant to safe installation and operation of critical sour facilities. Identify how the key staff capability requirements could be documented and verified in support of applications review processes.
- Identify availability of existing programs.
- Develop new, or modify existing programs to meet needs.
- Modify critical sour facility application – approval processes (i.e., Guide 56) to include documentation and verification of key qualification requirements.

Stakeholders:

EUB: Compliance and Operations Branch, Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Training Institutions, Alberta Human Resources and Employment

Recommendations and Proposed Implementation Actions Related to Sour Gas Operations

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

22. *The EUB implement stronger measures to safeguard against third-party damage to sour gas pipelines.*

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Provide options that may reduce the possibility of sour gas pipelines incurring third party damage.

Proposed Actions

- Consider requiring mandatory Alberta One-Call for sour gas pipelines.
- Evaluate feasibility of requiring mandatory certification for those responsible for a ground disturbance around sour gas pipelines.

Stakeholders

EUB: Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Canadian Standards Association, Canadian Energy Pipeline Association, Alberta One-Call

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

25. *The EUB increase the frequency of inspections and audits and continue to conduct both arranged and unannounced inspections of sour gas operations and develop simple, practical ways of informing nearby residents of inspection and audit results.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

Pay closer attention to sour gas operations and inform the nearby public of the inspection results to ensure they understand that the facility is operating safely and with minimal impact.

Proposed Actions

- The current process used to prioritize inspections is being reviewed.
- More weighting will be placed on sour gas operations near people.
- A practical public modification process will be developed.
- Receive stakeholder feedback and modify as necessary.

Implementation will include the following:

- Increase inspection frequency on sour oil and gas production facilities, over 10 moles/kmol, where public live/work within the Emergency Planning Zone (EPZ).
- Modify OSI process to ensure routine planned inspection frequency for oil and gas facilities with ERP's is increased as follows:
 - Sour Gas Plant Sulphur Recovery – from a 3 year to a 2 year cycle
 - Sour Gas Plant Acid Gas Flare – from a 5 year to a 3 year cycle
 - Sour Oil Battery – from a 5 year to a 2 year cycle
- Continue to immediately inspect/investigate all sour gas facilities where a public complaint is registered.
- Notify a sampling of the public to give them the results of the inspection and gather any concerns they have regarding the facility, and check currency of ERP information.
- Develop a public notification process. Consider: contact a minimum of two members of the public within the EPZ after the inspection to ensure:
 - they are aware of ERP
 - what to do in the event of an emergency
 - inform them of the inspection results

Stakeholders

EUB: Corporate Support Branch, Compliance and Operations Branch

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

26. *The EUB increase inspections and audits for operators without a proven track record in sour gas operations and for those with a history of noncompliance.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

The EUB will ensure that all industry licensees meet their operating safety obligations. In addition, the EUB will consider licensee experience as well as their current and past operating performance in setting inspection priorities.

Proposed Actions

- The current process used to prioritize inspections is being reviewed.
- More weighting will be placed on sour gas operations near people.
- Receive stakeholder feedback and modify as necessary.

Implementation will include the following:

- Increase the number of inspections and audits on operators with limited sour gas operating experience.
- Increase the number of inspections and audits on operators that have had previous unsatisfactory inspections.
- Modify OSI process to ensure undefined new operators are selected for mandatory inspection.
- Schedule 2 **additional** (total of 3 re-inspections) re-inspections on sour facilities within 9 months where that facility had a major unsatisfactory inspection.

Stakeholders

EUB: Applications, Compliance and Operations

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

27. *The EUB inspect critical sour wells located near people at least once during or immediately prior to drilling of the critical zone and inform nearby people of the inspection results. The inspections should include considerable focus on ensuring that the crew is adequately trained and certified.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

Ensure Critical Sour Well operations located near public occur safely with minimal impact and that the public is aware of and understands the emergency response plan.

Actions Taken:

- Review all critical sour well emergency response plans.
- Inspect all critical sour wells that have public living/working within the emergency planning zone.

Proposed Actions

- Develop a public notification process. Consider: contact a minimum of two members of the public within the EPZ after the inspection to ensure:
 - they are aware of ERP
 - what to do in the event of an emergency
 - inform them of the inspection results

Stakeholders

EUB: Applications, Corporate Support Branch

External: Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

28. *The EUB give highest priority to sour gas complaints, investigating them within one day, whenever possible, and always following up with the complainant.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

Ensure that the public is increasingly aware that the EUB cares and is responsive, and ensure potential negative effects on public health and safety from sour gas incidents are minimized through quick response to complaints.

Actions Taken – Recommendation Completed

- Conduct immediate investigations on all sour gas complaints.
- Advise complainants of results of investigation.
- Resident visits conducted when requested by complainant.
- Random representative sample (60%) of complainants contacted to gauge overall satisfaction with industry/EUB response.

Proposed Actions

- No further actions are proposed at this time; however, Field Surveillance will routinely revisit this recommendation and process to ensure all stakeholders' needs are being met.

Stakeholders

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

68. *The EUB enhance its capability to conduct monitoring as part of its complaint response and compliance programs.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

Improve EUB air monitoring capabilities to provide effective response to complaints and to determine exceedances of ambient air guidelines and take appropriate corrective action.

Proposed Actions

- Determine the appropriate air monitoring role for the EUB.
- Review options to fulfill EUB monitoring role including:
 - Increase use of existing air monitoring unit.
 - Update the H₂S analyzer in the existing unit.
 - Purchase an additional air monitoring unit to assist in monitoring and to provide backup in the event of breakdowns.
 - Hire 2 staff dedicated to operate the air monitoring units.
 - Investigate other alternatives (stationary, external contractor).

Stakeholders

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO SOUR GAS OPERATIONS

85. *The EUB ensure the existence in First Nations and Metis communities near sour gas developments, of a good complaint and incident response program that would have monitoring capability and surveillance and monitoring programs that provide good information on general air quality.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

To improve the effectiveness of EUB processes as they relate to Aboriginal communities and to improve the First Nations and Metis communities' awareness and understanding of EUB operations.

Proposed Actions

Consult with First Nations and Metis communities to determine their needs. Review the effectiveness of current processes to address those needs. Revise if necessary in consultation with others.

Suggested implementation will likely include the following:

- Develop a strategy to ensure appropriate communication protocols are in place for discussions with First Nations and Metis.
- Contract a consultant familiar with First Nations and Metis affairs and culture to assist the with the following:
 - design and implement a training program for Field Staff to enhance their awareness and understanding of First Nations and Metis cultures.
- Design and implement a training program for First Nations and Metis to enhance their awareness and understanding about the EUB and sour gas operations.
- Implement First Nations and Metis contacts as part of inspections on their lands.

Stakeholders

EUB: Chief Operating Officer, Compliance and Operations Branch, Corporate Support Branch

External: First Nations and Metis community representatives, Indian Resource Council, Alberta Aboriginal Affairs and Northern Development

Recommendations and Proposed Implementation Actions Related to Emergency Preparedness

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

15. *The EUB, industry, Alberta Environment, Alberta Health and Wellness, regional health authorities, and federal regulators, as required, ensure that there is a thorough follow-up process after major sour gas releases (such as well blowouts or pipeline failures) to determine impacts and identify opportunities for response improvement.*

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

To ensure a thorough assessment of the impacts of a major release, and have the parties ensure continuous improvement in prevention and response processes.

Proposed Actions

- Define major release and establish major release criteria.
- Determine standard information related to cause, conditions, response and impacts, needed to enable thorough assessment.
- Communicate requirements (ERP Guide?)
- Establish review process.
- Develop requirements for release of reports to all stakeholders, including public, in a timely manner.

Stakeholders

EUB: Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Environment, Alberta Health and Wellness, Alberta Municipal Affairs, Regional Health Authorities

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

54. *The EUB continue its current approach of reviewing all site-specific ERPs in detail, including the criteria used to determine the size of the EPZ, and all site-specific information included in an ERP.*
60. *The EUB require industry to use the EUB's current standard approach (EPZ curves) to determine EPZs until the review of EPZs proposed in recommendation 58 is completed.*
61. *In the interim until the review of the approach to EPZs is completed the EUB not approve a reduced EPZ unless it is conditional on the immediate ignition of the well, and the EUB is satisfied that the well can be immediately ignited and kept continuously burning. The EUB must also be satisfied that the ERP adequately addresses the potential hazards to the public within the reduced zone and also within an awareness zone out to the distance of the calculated EPZ based on the current EUB approach (EPZ curves), and that a specific assessment demonstrates protection of human health.*

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Ensure that all ERPs meet EUB requirements and adequately address all site-specific matters prior to approval. Ensure that every emergency planning zone determined by applicants for emergency response planning is based on appropriate criteria and uses the EUB's standard approach. Also, ensure that approval of a reduced EPZ is subject to Emergency Response Plan conditions that would provide for protection of human health within the entire (unreduced) EPZ.

Proposed Actions

- Evaluate the adequacy of the current ERP review process. Provide opportunity for input.
- Develop interim policy criteria and information requirements for conditional approval of reduced EPZ. Provide opportunity for input from stakeholders.
- Issue Interim Directive or Informational Letter with requirements to be met to qualify for any relaxation from current EPZ requirements.

Stakeholders

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Regional Health Authorities

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

55. *The EUB assess the capability of an operator to effectively implement an ERP at the time of application, and develop specific requirements to cover ERP validation through mandatory testing and exercises. This assessment should relate to financial capability as well as the operator's access to resources required to manage an emergency situation. The EUB should take into consideration the operator's compliance record and ability and willingness to effectively coordinate, communicate, and consult with EPZ residents and emergency service providers. Additionally, operators should be required to involve other responders, such as municipal authorities and regional health authorities, in exercises at least annually.*
56. *The EUB audit existing ERPs on a more frequent basis to ensure that*
- *the operator has the capability to implement its ERP,*
 - *plans are updated according to requirements regarding frequency of updates,*
 - *updating takes place immediately upon change of operatorship and prior to a new operator physically operating the facility, and adequate communication of updates with EPZ residents and emergency responders takes place.*

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

To ensure a process exists to assess the capability of operators to implement ERPs and maintain an appropriate level of emergency preparedness.

Proposed Actions

- Review the current audit process for ERPs.
- Establish criteria, requirements and a process to assess the capability of an operator to effectively implement an ERP for the drilling or completion of a sour well.
- Establish a parallel process for the continuing validation of ERPs for sour gas plants to ensure the operator is maintaining each plan at an appropriate level of emergency preparedness.
- Incorporate these requirements into the Guidelines and companion document currently being prepared by EUB and industry.

Stakeholders

EUB: Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Municipal Affairs (Disaster Services), Alberta Regional Health Authorities, local Government authorities as required

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

57. *The EUB require the operator to coordinate roles and responsibilities to be followed in the event of an emergency with other emergency responders through early and effective discussions with the municipal Director of Disaster Services and regional health authority's Medical Officer of Health during plan development.*
64. *The EUB continue its initiative to work with stakeholders to develop clear, complete, and concise guidelines and requirements for ERP development and implementation. In doing so, the following should be considered:*
- standardizing the contents and format of ERPs as much as possible, including consideration of mandatory components and terminology;
 - standardizing the requirements for a specific assessment of health impacts for emergency response planning;
 - including site-specific conditions of wind, topography, population distribution, access and evacuation routes, livestock management, and other community issues;
 - developing accurate resident information, including determination on a self-declaring basis of special needs persons requiring evacuation assistance or those hypersensitive to sour gases; and specifying more detailed requirements for resident information packages and the timing of their availability;
 - referring critical sour gas well ERPs by the EUB to relevant municipal responders and regional health authorities, at the application stage, for comment regarding response capability;
 - filing approved critical sour ERPs with the EUB, municipal emergency response agencies, and other emergency responders, including mutual aid groups where they exist;
 - establishing criteria for introducing a planning zone that is reduced from that determined by the EUB's standard approach, clarifying the meaning of "immediate ignition", identifying additional public protective measures to be required to ensure public health and safety, and describing roles and responsibilities of responders within the reduced EPZ, the Awareness Zone, and potentially affected areas beyond;
 - annually reviewing and updating ERPs, including individual resident details and other users of land;
 - establishing clear evacuation, ignition, and sheltering criteria, including criteria for when each of these measures would be considered acceptable;
 - defining requirements for "post-event" debriefings and follow-up activities; and
 - specifying how isolated communities and individuals (such as trappers, First Nations hunters, farmers, and transients) are planned for, including those where there is a lack of cellular coverage, which may cause communication delays.

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Ensure that sour gas operators have clear, complete and concise guidelines and requirements for ERP development and implementation that ensures an appropriate level of emergency preparedness. The requirements should reflect an approach, which is based on the current state of scientific understanding and technology. Requirements must address the involvement of all responders.

Proposed Actions

- EUB/industry currently preparing comprehensive guidelines on ERP requirements. Industry also preparing a companion document intended to assist industry to meet regulatory requirements.
- Review recommendations 57 and 64 and incorporate items identified in recommendations into the guidelines and companion document currently underway.
- Provide for involvement of other stakeholders in development of roles and responsibilities and in overall review of draft guides.

Stakeholders

EUB: Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Municipal Affairs (Disaster Services), Regional Health Authorities

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

63. *The EUB encourage operators to establish mutual aid agreements in areas with intensive industry development and multiple operators. This should include encouragement for operators to coordinate mutual aid with other industries (such as the forestry sector and petrochemical industries) in emergency response planning.*

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Investigate the potential to establish emergency response plan mutual aid agreements within the oil and gas industry and with other sectors of industry.

Proposed Actions

- In cooperation with Alberta Municipal Affairs (Disaster Service) establish a small stakeholder group from different industry sectors
- Investigate the potential and opportunities to establish areas of cooperation on emergency preparedness and response planning.
- Develop mutual aid agreements between different industry sectors where feasible and practical.
- Incorporate into Recommendation 64 the encouragement of the oil and gas industry to develop mutual aid agreements in areas where there are intensive oil and gas development and multiple operators.

Stakeholders

EUB: Field Surveillance

External: Alberta Municipal Affairs, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO EMERGENCY PREPAREDNESS

87. *The EUB work with Indian and Northern Affairs Canada (INAC), Health Canada (regarding First Nations), and Alberta Municipal Affairs (regarding Metis Settlements) to provide adequate infrastructure and resources to the First Nations and Metis for planning and development of disaster services capability.*

The planning should include the following matters:

- a) identification of overlap between plans;
- b) understanding of the roles of all parties, particularly as they relate to evacuation procedures;
- c) effective communication in the case of emergencies with the First Nations and Metis if they are in the affected region, even if outside of the EPZ;
- d) identification of resources needed for the development and implementation of disaster plans and/or perhaps a disaster office or a disaster fund; and development of mutual aid agreements.

Lead Agency / Branch

EUB – Compliance and Operations Branch

Intent

Ensure that adequate infrastructure and resources are available in/to First Nations and Metis communities in sour gas areas to plan and effect a response to a sour gas emergency.

Proposed Actions

Establish stakeholder committee to:

- assess current situation i.e., existing sour gas developments affecting First Nations/Metis communities to examine emergency preparedness and response capability,
- determine infrastructure/resource needs, and
- provide for necessary infrastructure/resources.

Note: First step is investigating the status of initiatives already underway and how this recommendation can be actioned in the context of the EUB jurisdiction and First Nations infrastructure.

Stakeholders

External: Alberta Aboriginal Affairs and Northern Development, Indian and Northern Affairs Canada, Indian Resource Council, Health Canada, Alberta Municipal Affairs, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Alberta Regional Health Authorities

**Recommendations and Proposed Implementation
Actions Related to Information, Communication and
Consultation**

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

16. *The EUB review and organize its existing large quantity of sour gas data on well, pipeline, and facility leaks, ruptures, flares, and venting to provide a historical database that is accurate and complete, and, in conjunction with other stakeholders, urgently develop and maintain new databases that deal specifically with sour gas, and make such databases available to the industry and the public. Databases should be accurate and comprehensive and include data on sour reservoirs, failures, release occurrences, release rates, enforcement actions, and continuous improvement. Recognizing that the databases can be only as good as the raw input data, there should be regulatory requirements that support the accuracy and submission of related information. The Committee acknowledges that implementation of this recommendation is likely to be costly in terms of initial development and continuous maintenance but believes it is critical to the process.*

Lead Agency / Branch

EUB - Resources Branch

Intent

Ensure that the EUB has a comprehensive sour gas database that is accurate, complete, and available to the industry and general public.

Proposed Actions

Data Requirements

- develop inventory of current sour gas related databases
- review with stakeholders what additional data needs to be collected
- determine if existing databases are complete and accurate
- review existing regulations and determine what additions or modifications may be required
- consult with stakeholders and confirm priority information requirements (i.e., prepare prototype of final product for feedback from stakeholders)
- identify options for disseminating information including, but not limited to, GIS-based WEB dissemination, partnering agreements with 3rd party vendors, hardcopy distribution, public access to EUB sour gas databases

Data Collection

- update existing but incomplete databases (including digitizing of all sour gas pools)
- prepare changes to regulations and/or develop guidelines for data submission
- develop process for surveillance and enforcement of data requirements

Data Structure

- analyze database structures and recommend appropriate approach to optimize access
- review options for database development including, internal and external review and development
- undertake database development or modification as required.

Data and Information Visualization

- finalize priority information requirements that will effectively meet stakeholders needs
- review and finalize options for disseminating information including, but not limited to, GIS based WEB dissemination
- select option, develop and implement.

Post Implementation

- develop process to ensure ongoing system maintenance and improvement.

Stakeholders

EUB: Information and Systems Services, Applications, Law, Corporate Support, Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

29. *The EUB field staff become more involved in landowner-operator discussions of sour gas concerns and in multistakeholders groups and assist in answering questions and resolving issues, particularly as they relate to public health and safety.*

Lead Agency / Branch

EUB - Field Surveillance Branch

Intent

Ensure active involvement and visibility with landowners/public and operators regarding sour gas concerns.

Actions Taken – Recommendation Completed

- Maintain current level of activity with synergy groups and promote the establishment of additional groups.
- Continue to hold EUB open houses and participate in industry open houses and project information presentation sessions.
- Maintain involvement in resolving landowner/operator issues through facilitation and Appropriate Dispute Resolution work.

Proposed Actions

No further actions are proposed at this time, however, the EUB will periodically meet with stakeholders to ensure current needs are being met.

Stakeholders

EUB: Appropriate Dispute Resolution Coordinator, Resources, Applications, Corporate Support Branch

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

37. *The EUB encourage mediation efforts and increase EUB staff involvement in an attempt to resolve concerns among stakeholders outside of the formal hearing process. This may require additional trained EUB staff. The Committee is aware of the recent announcement that the EUB has approved the Report for Implementation of Appropriate Dispute Resolution (ADR) and suggests that the EUB monitor the use and effectiveness of this approach to determine if further initiatives are required*

Lead Agency / Branch

EUB - Appropriate Dispute Resolution Coordinator

Intent

Proactive use of Appropriate Dispute Resolution tools such as mediation and facilitation processes to improve understanding amongst stakeholders and to facilitate resolution of issues outside more formal processes.

Actions Taken:

In January 2001, the EUB issued Informational Letter IL 2001-1 on the subject of Appropriate Dispute Resolution. In that IL, the EUB set out new expectations of the industry with respect to resolving application concerns with the public through alternative means to the traditional public hearing process. As part of this direction, the EUB acknowledged its increased role in facilitating the resolution of issues between the industry and landowners. To satisfy this role, the EUB has embarked on an ambitious program of facilitation and mediation training, with 100 staff trained to date and a further 122 scheduled for training this year. Additionally, the EUB has developed an industry-training program to be delivered through the Canadian Association of Petroleum Landmen. EUB staff have participated in some 160 facilitation cases since April 2000, of which 92 were satisfactorily resolved.

Proposed Actions

- Review policies with respect to EUB staff involvement and revise if necessary. Processes will be documented and publicized.
- Review application handling processes and Guide 56 to assess adequacy of information and encouragement to use ADR tools to address issues. Develop any appropriate modifications to the processes and Guide 56.
- Continue to provide training to Applications coordinators technical staff and field staff who may have opportunity to participate in facilitation/mediation/ADR processes.
- Assess effectiveness of processes.

Stakeholders

EUB: Applications, Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

39. *The EUB increase efforts to make hearings less formal and more user friendly. One example of how this might be done is to hold more prehearing conferences, where there is a potential to better scope the hearing, explain the hearing process to public participants, and resolve differences of views before the hearing regarding eligibility for intervener costs.*
40. *The EUB rewrite its brochure, Guide 29, on the hearing process to make it more understandable and then make it more widely available to the public.*

Lead Agency / Branch

EUB – Law Branch

Intent

Improve public understanding of the hearing process so that hearings are less intimidating to the public and more efficient when they are held, while continuing to provide a process that safeguards the rights of all parties.

Proposed Actions

- Complete the review of the new Rules of Practice of the Board and make them available to the public.
- Complete the review of interveners' costs policy of the Board and issue new Guide 31.
- Draft of a Questions and Answers document explaining the process from “how to make an objection” to “the hearing process”.
- Draft annotated Rules of Practice.
- Review and expand the content of Guide 29 to include the pre-hearing process, the hearing process, and the alternatives to a hearing or other measures that could be implemented, to speed up and simplify the hearing.
- Consult the public on the revised Guide 29 and on the Questions and Answers document.
- Distribute Guide 29 and the Questions and Answers document by hard copy and on web site
- Ensure a better understanding of the Board's procedure prior to a hearing by implementing the following measures, where appropriate:
 - Information session with the public prior to a public hearing
 - Pre-hearing conferences.
- Continued commitment by Law Branch counsel to personally respond to interveners' questions regarding process/hearing by telephone, E-mail or letter.

Stakeholders

EUB: Board, Law Branch, Applications Branch, Corporate Support Branch, Appropriate Dispute Resolution Coordinator

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, First Nations representatives, Public

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

45. *The EUB place greater emphasis on the need for its involved staff to be neutral when dealing with the public and industry respecting inspection results, complaints, and the resolution of concerns. This may require special training.*
46. *The EUB place greater emphasis on its role as a regulator to protect the public and provide a higher profile for its involvement in matters related to public health and safety. One option for achieving a higher profile which might be considered could be the creation of a public health and safety department within the EUB.*
47. *The public be made aware of the clear distinction between Alberta Resource Development's role of promoting the development of Alberta's resources and the role of the EUB as a regulator that ensures that if developments are approved they take place in a manner that is in the public interest.*
48. *The manner of funding the EUB be reviewed, including a consideration of the possibility of returning the funding back to an equal sharing by the industry and government to reflect the dual role of regulating the industry and serving the public interest. In this respect, a more conscious effort by the EUB is required to make the public aware that the contribution of the industry to the funding of the EUB is not voluntary but is a tax-like levy on production and facilities that, like any other tax, must be paid. It should also be made clear that the funding through an industry levy does not include control over EUB operational matters.*

Lead Agency / Branch:

EUB - Public Safety Implementation Team

Intent:

To improve the public's understanding and perception of the EUB's neutrality in carrying out its mandate. Also, to place greater emphasis on the EUB's role as a regulator to protect the public and to provide a higher profile for its involvement in matters related to public health and safety.

Proposed Actions:

EUB staff team to examine these issues and to develop strategies to address them. Actions will include the following:

- Provide EUB staff with appropriate training and tools to ensure they are, and are perceived to be, fair, objective and impartial.
- Develop and implement strategies to define and communicate to stakeholders the EUB's role as a regulator versus the role of the Department of Energy to promote development.
- Continue with the on-going review of the manner in which the funding of the EUB is shared between government and industry and better communicate respecting the way in which the EUB is funded to our customers.
- Review options to increase the profile of the EUB's role in public health and safety matters and select and implement the most attractive options.

Stakeholders:

EUB: Public Safety Implementation Team, Chief Operating Officer, Law

External: Department of Energy, Public

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

69. *The EUB establish a staff resource team that focuses on public consultation to assist industry in providing a more consistent approach to public consultation, including consultation with Aboriginal people.*
70. *The team referred to in recommendation 69 work with Canadian Association of Petroleum Producers, training institutions and other industry associations to develop public consultation training programs that reflect EUB requirements and expectations for public consultation and that incorporate training in the practices set out in the Canadian Association of Petroleum Producers Guide for Effective Public Involvement.*
74. *The EUB initiate, in conjunction with industry and training institutions, the development of effective communications training programs for those individuals responsible for communicating with the public respecting technical aspects of sour gas. Examples of programs would include risk communication methodology and emergency response consultation.*

Lead Agency / Branch

EUB - Corporate Support Branch

Intent

Improve industry awareness of, and compliance with, EUB public consultation (PC) expectations. Ensure consistent PC practice through monitoring and training programs, thereby improving relationships between industry, the public, and the EUB. Work with stakeholders to set standards and develop training courses for public consultation and technical communication.

Proposed Actions

69: Establish within the EUB a Core Staff Resource Team (SRT) with PC expertise to act as a resource both internally and externally.

The SRT will:

- advise EUB staff and industry with respect to PC,
- collaborate with other organizations in the development of PC and technical communication training programs,
- develop performance measures for evaluation of PC practices,
- monitor industry PC practices to ensure consistency, and
- coordinate all PC-related Public Safety and Sour Gas activities.

70 and 74:

- In conjunction with other stakeholders, develop performance measures for the evaluation of PC training programs.
- Assist in the development of public consultation and technical communication training programs for EUB staff and industry, reflecting EUB requirements and expectations.
- Monitor industry PC practice to both ensure that EUB PC expectations are being met and that training programs are meeting industry needs.
- We are currently consulting with First Nations and Metis people to establish protocols for public consultation and technical communication.

Stakeholders

EUB: Compliance and Operations Branch, Applications, Field Surveillance, Chief Operating Officer, Law

External: Training Institutes, Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, First Nations and Metis community representatives, Public

RECOMMENDATIONS AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

72. *The EUB develop a list of suggested questions to assist the public during the public consultation process.*
81. *The EUB develop a brochure for the public that focuses on the role of the EUB and provides contact names and phone numbers to be given out when industry does public consultation. It should also be widely distributed to all interested parties, such as municipalities, and posted on the EUB Web site. The brochure must be clear and succinct and be kept up to date. Consideration should be given to having a brief summary brochure for those with limited interest and a more detailed one for those with greater interest.*

Lead Agency / Branch

EUB - Corporate Support Branch

Intent

Provide the public with user-friendly tools for extracting necessary and required information from industry personnel related to project plans, as well as to the public's rights and responsibilities related to sour gas development, and whom to contact for more information.

Proposed Actions

Year One - Immediately:

- #72: Develop and distribute, or make available through various means, a document and other means of providing "instruction" to landowners seeking information about questions they should be asking operators when approached for access for oil or gas development.
 - Include in Guide 56's EUB Information Package for Public Consultation.
- #81: Update and distribute Guide 57-1a: The EUB and Energy Regulation.
 - Examine the possibility of creating a document to be distributed by industry during initial contact, as part of Guide 56's EUB Information Package for Public Consultation. This document is currently in the final stages of update.

Year One

The EUB collect all its public consultation guidelines into one document for use by EUB staff and industry, and within the training programs noted in #70. Corporate Support sees this as a critical and necessary piece of the work of the SRT noted in #69.

Develop, using various formats, a more formal, professional EUB Information Package for Public Consultation. This document is not new information, but a compilation of guidelines currently existing in EUB documents including Guides 56 and 60 and various ILs and IDs. It is, at this moment, nearly complete. Its wide distribution to industry and use in training programs could be postponed until the third quarter of 2001 to accompany #70. It has been requested for use by Field Surveillance field staff immediately.

Stakeholders

EUB: Applications, Compliance and Operations Branch, Field Surveillance, Resources, Law

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

73. *Formation of an information office located within the EUB and supported by a stakeholder committee, to provide accurate, reputable, neutral information related to sour gas development and to be a key contact for referring the public to sources of additional relevant, reputable information. The objective would be to work toward building trust and understanding among industry, the public, and the EUB and to liaise with stakeholder groups throughout the province. The existence of this information office and its role should be widely publicized and the office should be easily accessible to the public. Advertising could possibly take place through distribution of initial information packages provided to the public during public consultation and through EUB field centres and the EUB Web site.*

Lead Agency / Branch

EUB – Corporate Support Branch

Intent

Improve public and energy industry access to unbiased information and key contacts. Disseminate information in a variety of formats including liaising with stakeholder groups throughout the province.

Proposed Actions

- Consult with Supporting Branches to identify the organizational vision for the Information Office.
- Information Office to work in close association with the SRT (#69).
- Partner with other government departments in the dissemination of information.
- Through the Communications Audit currently underway, understand the linkages between Communications, ADR, the library, and portions of Information Services. (Communications envisions the scope of this information office as going beyond providing strictly sour gas information.)
- Assess logistical requirements (location, telecommunication requirements, document stocking, etc.).
- With this understanding in mind, establish an information office that is structured and functions as a central information source and referral service for accurate, reputable, neutral information.
- Develop a promotional strategy for publicizing the Information Office.

Stakeholders

EUB: Applications, Compliance and Operations Branch, Field Surveillance

External: Canadian Association of Petroleum Producers, Small Explorers and Producers Association of Canada, Public, Alberta Agriculture, Foods and Rural Development, Alberta Municipal Affairs, First Nations and Metis Communities

RECOMMENDATION AND PROPOSED IMPLEMENTATION ACTIONS RELATED TO INFORMATION, COMMUNICATION AND CONSULTATION

79. *The EUB initiate a study involving industry, government, the public, and municipal representatives to determine the nature of local benefits, such as reduced property taxes and local business opportunities, to communities impacted by sour gas development.*

Lead Agency / Branch:

EUB - Resources Branch

Intent:

Determine the nature of and quantify local benefits to communities impacted by sour gas development.

Proposed Actions:

Form a committee comprised of industry, government, municipal and public representatives. The committee would be responsible for providing input into the study approach to adopt the indicators that the study will examine to assess benefits and providing available data input where possible.

The following are possible factors or indicators that could be examined. Finalizing the list would take into account the committee's input and recommendations.

- Population and demographic distribution pre and post development.
- Direct and indirect employment generated in the region.
- Employment and training for residents.
- Local additional income.
- Other commercial operations generated in the area.
- Land use planning and regional development.
- Additional municipal taxes generated.
- Permanent institutional changes to accommodate the development.
- Additional Local expenditures.
- Prospects of related industrial development resulting from the proposed project.
- Any non-quantifiable benefits to society.

Stakeholders:

External: Government Departments, Industry Associations, municipal and public representatives