

SECTION 4 | Administrative Criteria

4.1 Basic Requirements

Various federal regulations applicable to the delegation to states of federal environmental programs provide a useful framework for the development of criteria for an effective state oil and gas exploration and production (E&P) environmental regulatory program. Such environmental regulatory programs should, at a minimum, include provisions for permitting, compliance evaluation, and enforcement.

4.1.1 Permitting

A state should have a regulatory mechanism to assure that E&P activities are conducted in an environmentally responsible manner. A program to achieve that objective may rely on one or more mechanisms, including issuance of individual permits, issuance of permits by rule, establishment of regulatory requirements by rule, issuance of general permits, registration of facilities, and/or notification of certain activities undertaken pursuant to general regulations. State agencies should have authority to refuse to issue or reissue permits or authorizations if the applicant has outstanding, finally determined violations or unpaid penalties, or if a history of past violations demonstrates the applicant's unwillingness or inability to comply with permit requirements. Where the operator responsible for E&P activities changes, state requirements should address the new operator's financial responsibility and compliance history. An effective state program should provide that a state permit does not relieve the operator of the obligation to comply with federal, local, or other state permits or regulatory requirements.

Individual permits for specific facilities or operations should be issued for fixed terms. In the case of commercial or centralized facilities, permits generally should be reviewed and revised, if necessary, no less frequently than every five years. Where two or more regulatory programs mandate similar requirements, those requirements should be combined where feasible. The process for obtaining permits and other authorizations should also involve prompt consideration and response to applications while preserving the integrity of the permit review process, including appropriate public participation. For the purposes of these guidelines, the terms "license" or "licensing" as used in Section 7 of these guidelines, criteria for the management of E&P NORM, will be synonymous with the terms "permit" or "permitting" as they are used throughout these guidelines.

4.1.2 Compliance Evaluation

State programs should contain the following compliance evaluation capabilities:

- a. Procedures for the receipt, evaluation, retention, and investigation for possible enforcement action of all notices and reports required of permittees and other regulated persons. Investigation for possible enforcement action should include determination of failure to submit these notices and reports. Effective data management systems as prescribed in Section 4.2.7. can be used to track compliance.
- b. Inspection and surveillance procedures that are independent of information supplied by regulated persons and which allow the state to determine compliance with program requirements, including:
 - i. The capability to conduct comprehensive investigations of facilities and activities subject to regulation in order to identify a failure to comply with program

- requirements by responsible persons;
- ii. The capability to conduct regular inspections of regulated facilities and activities at a frequency that is commensurate with the risk to the environment that is presented by each facility or activity; and
 - iii. The authority to investigate information obtained regarding violations of applicable program and permit requirements.
- c. Procedures to receive and evaluate information submitted by the public about alleged violations and to encourage the public to report perceived violations. Such procedures should not only involve communications with the public to apprise it of the process to be followed in filing reports or complaints but should also communicate how the state agency will assure an appropriate and timely response.
 - d. Authority to conduct unannounced inspections of any regulated site or premises where E&P activities are being conducted, including the authority to inspect, sample, monitor, or otherwise investigate compliance with permit conditions and other program requirements.
 - e. Authority to enter locations where records are kept during reasonable hours for purposes of copying and inspecting such records.
 - f. Investigatory procedures that will produce a paper trail to support evidence which may be admitted in any enforcement proceeding brought against an alleged violator, including clear inspection and inspection reporting procedures.

4.1.3 Enforcement

4.1.3.1 Enforcement Tools

With respect to violations of the state program, the state agency should have effective enforcement tools, which may include the following actions:

- a. Issue a notice of violation with a compliance schedule;
- b. Restrain, immediately and effectively, any person by order or by suit in state court from engaging in any impending or continuing unauthorized activity which is causing or may cause damage to public health or the environment;
- c. Establish the identity of emergency conditions which pose an imminent and substantial human health or environmental hazard that would warrant entry and immediate corrective action by the state agency after reasonable efforts to notify the operator have failed;
- d. Sue or cause suit to be brought in courts of competent jurisdiction to enjoin any impending or continuing violation of any program requirement, including any permit condition, without the necessity of a prior revocation of the permit;
- e. Require, by administrative order or suit in state court, that appropriate action be undertaken to correct any harm to public health and the environment that may have resulted from a violation of any program requirement, including, but not

limited to, establishment of compliance schedules;

- f. Revoke, modify, or suspend any permit upon a determination by the state agency that the permittee has violated the terms and conditions of the permit, failed to pay an assessed penalty, or used false or misleading information or fraud to obtain the permit; or
- g. Assess administrative penalties or seek, in court, civil penalties or criminal sanctions including fines and/or imprisonment.
- h. Forfeiture of financial assurance instruments.
- i. In some states, enforcement remedies include authorities to cause cessation of production or transportation of product, and/or seizure of illegal product.

4.1.3.2 Penalty Guidance

States should develop guidance for calculations of penalties that include factors such as:

1. the economic benefit resulting from the violation,
2. willfulness,
3. harm to the environment and the public,
4. harm to wildlife, fish or aquatic life or their habitat,
5. expenses incurred by the state in removing, correcting, or terminating the effects of the unauthorized activity,
6. conservation of the resource,
7. timeliness of corrective action,
8. notification of appropriate authority,
9. history of violations, and
10. location of the violation relative to disproportionately affected communities.

Benefits of guidance for calculation of penalties include consistency in the assessment of penalties and development of readily defensible assessments. Penalties should be such that an operator does not benefit financially from unlawful conduct and should provide compliance incentive to other operators. When supplemental environmental projects (SEP) are considered, states should ensure that project outcomes benefit the affected community. When considering SEP options, states should consult with residents of the affected community to gain insight about potential projects. States should evaluate their enforcement options and policies to assure that the full range of actions available are effectively used.

4.1.3.3 Right of Appeal

The right to appeal or seek administrative and/or judicial review of agency action should be available to any person having an interest which is or may be adversely affected, or who is aggrieved by any such action.

4.2 Additional Program Requirements

Beyond basic requirements, an effective state program should also include a variety of other administrative requirements as discussed below.

4.2.1 Contingency Planning and Spill Risk Management

4.2.1.1 State Contingency Program

- a. The state should develop and adopt a state contingency program for preventing and responding to spills and unauthorized releases to land, water, or air from E&P facilities. The state program need not duplicate applicable federal regulations for contingency planning and spill risk management. The state's contingency program may include a state contingency plan or may consist of a set of regulations or operator contingency plan requirements. The program should define the volume of a spill or release of a petroleum product or waste and the level of risk to various receiving environments that triggers implementation of the spill contingency plan and response requirements.
- b. The state contingency program should also contain funding provisions which enable the state agency to undertake immediate response actions for significant spills or releases which constitute a threat to human health or the environment in the event that a responsible operator cannot be located or is unwilling or unable to respond to the spill or release in a timely manner.

4.2.1.2 Reporting Capabilities

The state should provide mechanisms for operators or the public to report spills and unauthorized releases. These mechanisms should include telephone access 24 hours a day, 7 days a week. A single point of contact 1-800 telephone number should be considered. Telephone answering capabilities should include provisions for the prompt notification of appropriate state agency personnel.

4.2.1.3 Interagency Coordination

The state should provide for coordination of actions between appropriate agencies that have jurisdiction for the management of risks from spills and unauthorized releases from E&P facilities. This includes clear designation of onsite spill responsibilities.

4.2.1.4 Operator Prevention of, and Response to, Spills and Releases

The state agency should require an operator to take measures to prevent, and prepare to respond to, spills or unauthorized releases of petroleum products or waste that may occur at an E&P facility. These requirements can be spelled out in regulations or guidance, or they may be included in operator-specific or site-specific plans.

4.2.1.4.1 General

State contingency programs should address the following:

- a. E&P facilities, equipment at those facilities, and materials found at E&P sites that may pose a significant threat to human health and/or the environment;
- b. The various types of receiving environments, including water (surface and groundwater)

and land (environmentally sensitive areas, special soil or geological conditions, urban areas, cultural and special resource areas); and

- c. Public and responder safety concerns, including training for response personnel.

The state program should require the operator to identify the following:

- d. The operator's incident command structure, including emergency contact information for key personnel;
- e. Equipment, manpower, contracted services, and other logistical support necessary for response to spills and unauthorized releases;
- f. Opportunities for coordination of joint response actions, manpower or equipment, with nearby well sites or other facilities of the operator or other operators;
- g. Procedures for identification of and communication with parties impacted or threatened by spills or unauthorized releases;
- h. Acceptable methods of containment of spills and unauthorized releases; and
- i. Acceptable disposal methods, such as on-site remediation, approved disposal facilities, and waste haulers, for materials of concern.

4.2.1.4.2 Prevention Measures

Where spills and unauthorized releases pose a significant risk to human health and/or the environment, the State should require prevention measures that may include the following:

- a. Secondary containment such as dikes, berms and firewalls, or equivalent measures;
- b. Tertiary containment and/or monitoring systems in high-risk areas;
- c. Inspection, testing, and maintenance schedules and procedures for facilities and equipment;
- d. Site security measures as necessary; and
- e. Periodic review of spill histories to identify opportunities to reduce future spills and unauthorized releases.

4.2.1.4.3 Response Measures

A State program should include reporting and notification procedures to be used in the event of a spill or unauthorized release. These should include the following:

- a. Agencies and parties to be notified with contact information;
- b. The type of reporting (verbal, written) required for various incidents;
- c. Reporting time requirements;
- d. Reporting thresholds;
- e. Operator reporting information, such as the name of the operator and the operator's

representative reporting the incident; a description of the incident, including the date and time of the incident and its discovery; the type and volume of material released; the location of the incident; the apparent extent of the release; damage or threat to groundwater, surface water, land, and/or air; and weather conditions; and

- f. The state should specify any requirements for final reporting, site monitoring, and necessary agency approvals. Any final report should identify the incident cause and actions taken to prevent or minimize the likelihood of a recurrence.

States should provide guidance for containment, abatement, and remediation, including the following:

- g. Cleanup standards;
- h. Required sampling and analyses;
- i. Where appropriate, approved non-mechanical response actions, such as the use of dispersants and in-situ remediation, including identification of the agencies that must provide approval of these operations; and

4.2.1.5 Follow-Up Actions

The state program should provide for enforcement, as described in Section 4.1.3. of these Guidelines, for the failure of an operator to report or respond to spills and unauthorized releases as required. The state program should also consider provisions for the assessment of damages caused by an incident. A state program should contain provisions allowing the state to pursue a responsible operator for reimbursement of state monies expended in responding to such a spill or release.

4.2.1.6 Database

The state data management program, as described in Section 4.2.7. of these Guidelines, should include information on spills and unauthorized releases. This data should be analyzed periodically as part of a program effectiveness evaluation as described in Section 4.2.3, Program Planning and Evaluation, of these Guidelines.

4.2.2 Public Participation

4.2.2.1 Notice and Records

Affected communities should be provided with adequate notice of the agency's consideration to issue a permit or license for appropriate E&P activities. Such efforts should balance efficient permit processing with meaningful opportunity for input from the affected public. The agency should establish guidance on determining the degree of public input for different types of permits or licenses. In addition, the agency head should have the authority to convene a public hearing when s/he determines it to be in the public interest. Where public input is sought, the agency should utilize communication methods that will most effectively reach affected communities. Effective communication should include creating short, plain-language summaries of proposed actions that are understandable by people with a variety of educational attainment and levels of English proficiency. States should consider factors that may limit meaningful

involvement of affected communities in public comment opportunities, such as non-English speaking populations, timing of meetings, and availability of internet access. When translation is required comment periods should be extended to allow adequate time for both translation and outreach to the population. States should interface with community groups in the affected community to inform and plan for translation needs. States should also consider offering interpretation services for any hearings or public meetings about proposed permits or licenses, to make those meetings accessible to non-English speakers.

The agency should consider methods to enhance the responsiveness of its public participation such as responding to comments and sharing how the program considered comments in its decision making. Where possible, notice should be coordinated with the requirements of other concurrently applicable state or federal programs. The agency may also require operators to provide written notice to adjacent landowners of record for such areas and in such manner as may be prescribed by the agency.

Agency records should generally be available for review by the public in accordance with applicable state and federal laws and agency practices. Where information submitted by an operator is of a confidential business nature, an agency should have procedures for segregating that information and protecting it from disclosure. In all cases, spill, violation, and waste disposal and pit location records should be available to the public. Agencies should establish a minimum record keeping period of three years that should be automatically extended while any unresolved enforcement action regarding the regulated activity is pending.

4.2.2.2 Program Information

States should provide for the dissemination of program information to the regulated industry and the public. Such educational materials should include information or guidance on contingency planning, spill response, permitting, operating, monitoring and other requirements. Wherever possible, educational materials should be concise and written in plain language that is easily understood by members of the public with a variety of levels of educational attainment and English proficiencies. Educational materials should be provided in the two most commonly spoken languages¹ within the state (or a smaller geographic unit such as a county where applicable). Such efforts should be part of an ongoing process through which information is exchanged in an open forum. Because E&P environmental requirements are undergoing numerous changes, states have the obligation to inform the regulated industry and the public of changes.

Industry associations, community groups, religious organizations, community centers, and other organizations may provide opportunities for convenient and effective dissemination of information. States should actively make use of seminars, newsletters,

¹ The U.S. Department of Justice makes map of the most commonly spoken non-English languages by county available on its website: <https://www.lep.gov/maps>

special mailings, association committees, incentive programs and other mechanisms.

4.2.2.3 Advisory Groups

States should use advisory groups of industry, government, and public representatives, or other similar mechanisms, to obtain input and feedback on the effectiveness of state programs for the regulation of E&P activities. Provision should be made for education or training as is appropriate to give such advisory groups a sound basis for providing input and feedback. States should seek opportunities to partner with community groups to gather information on unique community needs and input. States should seek to foster positive relationships with such community groups to develop open lines of communication and improve the transparency and availability of data. When community members serve on advisory groups in a purely volunteer capacity (i.e., are not paid by their employer for their participation), states should explore providing stipends or participation incentives (i.e., gift cards) to compensate the community members for their time.

4.2.3 Program Planning and Evaluation

4.2.3.1 Program Planning

States should have a sound regulatory development process which includes both short-term and long-term strategic planning for defining goals and objectives, setting priorities, and evaluating the clarity, efficiency, and effectiveness of the E&P environmental regulatory program. In formulating environmental regulatory programs, states should use the best available scientific and technical information and should consider the environmental, economic and energy impacts of the regulations.

4.2.3.2 Program Evaluation

Beyond the general, technical, and administrative criteria set forth elsewhere in this guidance document, a program for the regulation of E&P activities should evaluate how well the program protects human health and the environment while recognizing the need for an economically viable oil and gas industry.

Program evaluation measures may be of a wide variety and include positive indicators (what's working) as well as negative indicators (what's not working). Some administrative aspects of program performance can be evaluated by examining how well the program enables the industry, the public, and the regulators themselves to function. Environmental aspects can be evaluated by assessing some combination of preventive measures, the qualities and characteristics of E&P wastes the severity of impact from a spill or unauthorized release, and the timeliness of remediation. While it is important for the program to have adequate rules, performance evaluation indicates to what extent the implementation of a rule or practice of the program brings about environmental protection.

Although a formal evaluation of program performance might occur at periodic intervals, the monitoring of activities and the modifications to the program form an ongoing, cyclic process. This process has no specific beginning or ending point. Rather, the steps in the process form a continuous progression that should be examined during performance review.

A state should select parameters that are appropriate for use in measuring the effectiveness of

its E&P regulatory program. Documentation of the selected parameters and the ability to acquire, assess, and present the relevant data are critically important to evaluation of performance. This requires establishing a definition of the parameters being evaluated and specifying the technical measurements to be made or the technical data to be examined. In addition, it requires installation and use of a data management system that facilitates review and evaluation.

Program performance should be evaluated periodically, using measures that can be applied consistently from one evaluation period to another, although the measures may evolve and improve in time. If a database of releases, regulatory activities, remediation sites, or other information is used for performance evaluation, it should, if possible, extend backward in time so as to enable a measure of progress on historical problems.

4.2.3.3 Qualities of Performance Measures

In evaluating its performance, a program should have data management capabilities to enable assessment of program effectiveness and timeliness. Evaluation measures should do the following:

- a. Be quantitative, whenever possible;
- b. Allow consistent evaluation across time;
- c. Be available to program personnel, the industry, and the public;
- d. Document significant trends;
- e. Summarize an evaluation of the nature and extent of contamination [Section 5.2], abandoned wastes, and abandoned facilities [Section 6] as they occur across the state; NORM [Section 7], stormwater management [Section 8], hydraulic fracturing [Section 9], air quality [Section 10], and reused & recycled fluids [Section 11].
- f. Include identification and priority of outstanding environmental threats, so as to aid the program in targeting its efforts;
- g. Enable evaluation of whether the program's responses to violations encourage compliance.

Evaluation of performance may include, as an example:

- a. Contamination: the state-wide nature and extent of environmental contamination by E&P wastes;
- b. Trends: whether the extent of contamination by E&P wastes is increasing or decreasing, and the reasons why;
- c. Prevention: the effectiveness of the program's efforts in preventing releases of E&P wastes to the environment;
- d. Timeliness: the timeliness of agency actions in controlling the impacts of E&P wastes released to the environment;
- e. Abatement: the effectiveness of agency actions in abating pollution by E&P wastes, or in causing pollution to be abated; and

- f. Enforcement: the effectiveness of the agency's administrative controls in the prevention or abatement of pollution by E&P wastes [Section 4.1].

4.2.3.4 Baselines and Follow-Up

A state agency should regularly evaluate its effectiveness in attaining the goals set forth in Section 3.2 in a way that will create a baseline against which to compare the program's performance in the future.

A state agency is encouraged to conduct periodic self-assessments in addition to the assessments conducted in the State Review Process. These self-assessments should document successes and should identify areas for improvement. This will allow continual improvement of a state's program while recording its successes.

The utilization of performance evaluations and a continual improvement process will demonstrate the state's efforts to adapt to changes in technology, concerns of the public and regulated community, and to provide both for the documentation of successes and identification of areas requiring improvement.

4.2.3.5 Examples of Program Evaluation

4.2.3.5.1 Assessment of Impacts

A state could identify documented cases that demonstrate reasonably clear links of cause and effect between operational practices and resulting environmental impacts. Such impacts might be human health effects, ecological effects, effects on wildlife or livestock, or effects on natural resources.

From examination of documented cases, a state could determine whether those cases were the result of violations of existing program requirements, insufficient programmatic enforcement of the requirements, other causes, or whether the cases suggest that the requirements should be revised.

A case could be documented if impacts are found to exist as part of the findings of a scientific study. Such studies could be formal investigations supporting litigation or a state enforcement action, or they could be the results of technical tests (such as monitoring of wells) if such tests (a) were conducted with state-approved quality control procedures, and (b) revealed contamination levels in excess of an applicable state or federal standard or guideline (such as a drinking water standard or water quality criteria).

Examples of possible impact indicators could include the following:

- a. The area or other measure of contaminated or affected ground or surface water, tracked periodically over time.
- b. A histogram of the number of releases versus time, amount of produced resource and number of wells in the state. Releases might be grouped by material released, such as crude oil, produced water, etc.
- c. A histogram of the number of releases of a given material versus the approved time to completion of remediation.

- d. The time elapsed between an agency's receipt of a remediation proposal or related correspondence, and the agency's response to that proposal or correspondence.
- e. Analysis of activities and results
- f. Activity and results analysis comprise administrative measures of program goals, plans, and operations. These measures focus on prevention of pollution, efficiency of operations, priorities, and the allocation of resources within the program.

The following are examples of activities:

- g. The development of a strategic plan with goals, milestones, and establishment of priorities [Sections 3.2, 4.2.3]. The plan should be based on anticipated threats and/or known impacts, as well as budget and administrative factors that may be beyond the control of the agency.
- h. The development of a program promoting use of the waste management hierarchy [Section 5.3].
- i. A review of the number of stream miles listed as impaired by oil and gas activities in the state biennial Integrated Water Quality Monitoring and Assessment Report required under Sections 305(b) and 303(d) of the federal Clean Water Act.
- j. An evaluation of the number of wells abandoned without being properly plugged compared to levels of financial assurance or other program measures to address orphan wells.
- k. Evaluation of the results of surveys to determine the satisfaction of permit recipients and other customers with program implementation.
- l. The development of a program, including time and activity tracking, to conduct efficiency studies of average time to issue permits, conduct inspections and perform other required activities.
- m. A documented process for obtaining input from within the agency, from the public, and/or from an advisory group for identification of program strengths and deficiencies [Section 4.2.2.3].
- n. Evaluation of the results of a training, educational, or outreach program [Section 4.2.2].
- o. Evaluation of the effectiveness of the agency's enforcement program. [Sections 4.1.2, 4.1.3, 4.2.1.2].

The following are examples of results:

- p. The number of inspections by the agency.
- q. The number, type and causes of spills, accidents and safety incidents reported to the agency.

- r. The number of operations witnessed by the agency.
- s. The number, type, frequency and cause of violations detected by inspectors [Section 4.1.2].
- t. The number, type, frequency and cause of complaints by the public, and the time required to resolve those complaints [Section 4.2.2.1].
- u. The number of violations, the time to resolve those violations, and the number unresolved [Section 4.1.2].
- v. The number of actions going to hearing, enforcement, and/or fines [Section 4.1.3].

4.2.4 Financial Assurance

All states should have an adequate financial assurance program to provide resources to the state to close or remediate a site should an operator fail to meet its obligations under the law. The goal of any financial assurance program should be to avoid passing on the responsibility for closure and remediation costs to the state. An adequate financial assurance program should be supported by the following elements: frequent site inspections; strict permit enforcement; and appropriate regulations governing and monitoring “inactive status” of covered facilities.

States should identify activities such as closure and remediation and other relevant activities for which criteria have been set forth in Section 5 that need to be covered by financial assurance. Some states require financial assurance for inactive wells, some for drilling and/or plugging, some for waste disposal facilities, and some for the life of the well.

States should determine the types of financial assurances that will provide reliable monetary resources to the state and will facilitate an operator’s compliance with permit requirements. Types of financial assurance may include the following:

- a. Surety bonds;
- b. Self-bonding;
- c. Letters of credit;
- d. Certificates of deposit;
- e. Cash,
- f. Federal, state, or municipal bonds; and
- g. Other forms of collateral.

Some states require performance bonds and some states require penal bonds. Some states accept a nonrefundable fee to be paid into the well plugging fund in lieu of a bond. Some states allow phased payments of collateral into a fund so that small operators can develop a collateral bond over a specified period of time. States should develop financial assurance options that facilitate an operator’s compliance with bonding requirements. In addition to single well bonds, many states allow blanket bonds. This allows operators to assure that an established minimum level of financial assurance is provided without the commitment of an unnecessary amount of operating funds.

States should periodically review the amount of assurance required to determine if the amount is adequate to provide incentive for proper plugging of a well and reclamation of a site, and to assure proper management of E&P wastes.

In the case of commercial and centralized facilities as defined in Section 5.10, including those that manage TE/NORM, state financial assurance requirements should be sufficient to cover the costs of appropriate facility decontamination, reclamation, and closure, and should extend through any post-closure care, monitoring, or control period. (see Section 5.10.2.2.4.)

States should develop appropriate procedures to access an operator's financial assurance when the operator does not meet the obligations covered by the financial assurance. These procedures should include provisions for notice, hearings, and forfeiture.

Some states have special funds, such as well-plugging funds, that are available for state use to correct problems where an operator does not comply with state requirements.

Although the availability of such funds may be a consideration in some states when determining bond coverage amounts, special funds should be used to supplement rather than completely take the place of other forms of financial assurance provided by the operator. The use of special funds should be limited to instances where the responsible operator cannot be determined or is unavailable. These special funds can be generated by taxes, fines, forfeitures, or fees.

4.2.5 Waste Hauler Certification

The appropriate state agency should have authority to require the training of drivers of trucks that are involved in the commercial transportation of E&P waste to a commercial or centralized disposal facility. Such training should include, among other things, emphasis on proper record keeping, the need to deliver the waste to the designated facility and emergency response and notification procedures. The appropriate state agency should also have authority to require the registration of all vehicles used to commercially transport the waste and of all commercial waste haulers.

4.2.6 Location of Closed Disposal Sites

A state program should contain authority with respect to disposal site closure, including authority to identify the location of the disposal site and for such information to be permanently maintained by the state agency for public review. Whether the location of a waste disposal site is disclosed in the public land records is a matter that is within the discretion of the state.

4.2.7 Data Management

4.2.7.1 General

Effective data management systems should be maintained due to the amount of information that states compile. Such systems should include permitting, operating, spill, remediation, and monitoring information and should include those data elements that an individual state finds are necessary to make cost-effective, risk-based decisions. Data should be maintained on as detailed a level as is necessary for the agencies to conduct their regulatory reviews. States and the federal government should undertake efforts to facilitate the sharing of data among responsible agencies, the public, and other users.

States should develop policies for data access, data dissemination, and the allocation of cost of services to governmental and non-governmental users.

4.2.7.2 Electronic Data Management

Electronic filing, permitting, imaging, geographic information systems and internet data transfer and access are technologies that can contribute to program efficiency and data accessibility. Because of the efficiencies of electronic data management and enhanced accessibility of electronic data to regulators, the industry and the public, agencies are encouraged to develop systems for the electronic submittal, storage and retrieval of agency data. States are encouraged to implement electronic data management systems to improve program efficiency, public data access, and data security to the extent they are appropriate to the State's regulatory program.

Web-based maps available to the public should include appropriate information (i.e. permits, enforcement activities, and information from co-regulators to the extent possible). In developing such maps, state programs should balance publicly available information with contemplation of possible safety and security issues associated with mapped facilities.

4.2.7.3 Retention and Access

An agency's data management program should provide for the capture of data and images as appropriate, and for both protecting the quality of data collected and the long-term protection and backup of captured information through measures such as off-site duplicate storage, archiving, and/or data retention and destruction policies.

Agencies should include public and industry access in their data management systems. Most program data are available to the public under various sunshine rules. Some records may be retained as confidential files for a defined period of time. Certain confidential types of data may also be discoverable. States should develop policies that define data sets to be made available to the public and/or industry.

4.3 Personnel and Funding

4.3.1 Personnel

For a state program to function effectively, sufficient, properly trained personnel to accomplish the goals and objectives of the program are necessary.

In determining its personnel needs, a state agency should consider not only the number of activities that it must regulate and inspect, but also the accessibility of those activities to agency personnel. Accessibility will be heavily influenced by the size of the area to be regulated, the local terrain, and road conditions. In addition, a state agency should evaluate how its personnel needs will be affected by activities occurring in environmentally sensitive areas (e.g., in close proximity to surface water and groundwater).

Generally, personnel needs should be evaluated in each of the categories of administration, legal, technical, and field inspectors. In each case, a state agency should define the areas of responsibility for the position, as well as any prerequisite experience and background. In addition, the state agency should provide for the continuing training of personnel to keep them

abreast of changes in regulations, policy and technical issues, and to increase professionalism. This training can be accomplished through such means as seminars and university short courses. The following discussion addresses these issues in each of the major personnel categories:

4.3.1.1 Administration

The elements of the administration of a state program should include traditional administrative functions such as program planning and evaluation, budgeting, and personnel. In addition, administration should be responsible for such programmatic functions as permitting, licensing, financial assurance, and ownership transfer. Public involvement and data collection management are also key elements of program administration. The conduct of public hearings, the coordination of enforcement activities, and the referral of cases to legal personnel for follow-up action should also be administrative functions.

4.3.1.2 Legal

Legal support for an E&P environmental regulatory program can be provided by in-house state agency lawyers through the support of the attorney general's office or through independent counsel. In any case, sufficient legal support should be provided to a state agency to assure that the regulatory program has an effective capability to pursue appropriate enforcement actions in a timely manner against violators of program requirements. A critical element of this capability is that the program's legal element be capable of directing the preparation of enforcement cases and providing guidance and direction to field inspectors and others involved in case preparation. The legal element of a program should also be involved in both the procedural and substantive aspects of rulemaking.

4.3.1.3 Technical

All program elements require adequate technical support. In supporting administrative functions, technical personnel should provide geologic and engineering evaluation, and technical specifications on such matters as cementing and casing. Technical support to the legal and field personnel is necessary for the development and implementation of rules and in the preparation of enforcement cases.

In support of field inspectors, technical personnel should be capable of mapping hydrologically sensitive areas and areas containing treatable water and provide support in determining pit construction requirements and guidance in waste handling. Key technical personnel should have a Bachelor of Science degree in geology, engineering, hydrology, earth science, environmental science, or a related field, or possess equivalent experience. Technical personnel should be subject to continuing education in such areas as ongoing development of rules, policies, and technological changes.

4.3.1.4 Field Personnel

Field personnel should be responsible for conducting routine inspections of regulated facilities and activities to assure compliance with program requirements. In addition, field personnel should be among the state agency's on-site representatives to witness critical regulated activities and to observe or supervise clean-up or remedial actions. Field personnel also should be involved in the assembly of evidence for enforcement actions and in the state agency's community relations.

Field personnel generally should be high school graduates or have equivalent experience and should otherwise be knowledgeable about oil and gas field-related work and waste management practices.

The ongoing training of field personnel should emphasize the range of chemical and radiological constituents in E&P wastes and at E&P sites, sampling and investigative procedures associated with enforcement proceedings, and a thorough understanding of current rules and policies of the program, as well as sound environmental practices. Field personnel should be provided with training in TE/NORM identification and management, where appropriate.

In addition, field personnel should be skilled in the handling of hazardous materials and in all aspects of personnel safety. They should also be trained in the identification of abandoned sites and the abandoned site remediation program, storm water management practices and requirements, and hydraulic fracturing processes.

4.3.1.5 Training Requirements

State programs should provide for adequate and effective training of state agency personnel regarding the regulations, policies, and criteria applicable to E&P activities. These programs should include training for agency personnel on such issues as site maintenance, contingency planning and spill response, permitting requirements and standards, compliance requirements and criteria, data management, enforcement procedures, investigative procedures, court preparation, report writing, sampling and analysis, and such other issues relating to proper E&P environmental regulation as may be necessary. Training programs should be incorporated as an on-going activity to encourage consistent enforcement of regulation throughout the state.

4.3.2 Funding

An effective E&P environmental regulatory program should be funded at a level sufficient to allow it to accomplish its environmental protection goals and objectives. While many state agencies are funded through a general appropriation from that state's legislature, each state agency should evaluate other sources of funding such as user fees, special levies on production, the dedication of fees and penalties to special accounts, and grants from various sources.

4.4 Coordination Among Agencies

Many state programs regulating E&P activities have their roots in oil and gas conservation programs that were established during the early part of the last century. In most cases, these programs have evolved to accommodate other state and federal objectives such as protection of human health and the environment.

In most states, multiple agencies are involved in the management of E&P activities. Different agencies are often responsible for the regulation of oil and gas wells, pits and impoundments, disposal wells, surface water discharges, spill prevention and response, and disposal of drill cuttings and muds. Each agency has its own administrative requirements relating to permitting, operational requirements, and financial assurance, and develops its own budget priorities. Each has its own inspection and enforcement authorities. Unless a high level of formal interagency coordination exists, such unilateral program development and implementation can lead to duplication of personnel effort, duplication of regulation with sometimes conflicting standards for

the industry, and duplication of funding. Duplication of programs often diminishes the effectiveness of spill response, permitting, inspection, enforcement, training, and other regulatory activities.

Where multiple state agencies have jurisdiction over the management of E&P activities, budget development should be coordinated and the agencies should develop formal coordination procedures, such as the development of interagency Memoranda of Agreement, interagency task forces with periodic meetings, and/or interagency legislative and regulatory review panels to ensure jurisdictional clarity and regulatory consistency. Where state oil and gas environmental regulatory agencies interface with other state agencies on permitting, enforcement, and other activities with a nexus to environmental justice² (EJ) issues, they should evaluate the alignment of their EJ definitions to ensure that affected communities are given equal consideration.

Additionally, states should review existing agreements to assure that they are current and effective. Finally, interagency mechanisms should be developed to facilitate the sharing of information among and between involved agencies so that each agency can carry out its program responsibilities.

² The US EPA defines environmental justice (EJ) as, “The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”² Definitions of environmental justice may differ from state to state, or from agency to agency within a state, but generally refer to low-income communities or minority communities or communities of color such as would be identified by US EPA’s EJSCREEN mapping tool.