

9/1/90 PNM 90

SCOPE OF WORK FOR A CORRECTIVE MEASURE STUDY (CMS)

AT
PERSON GENERATING STATION
PUBLIC SERVICE COMPANY
ALBUQUERQUE, NEW MEXICO

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative or alternatives and to recommend the corrective measure or measures to be taken at the Equipment Wash Station and the Below Grade Waste Oil Tank at the Person Generating Station, Public Service Company (PNM). Upon review and approval of the Final CMS report by EID, a proposed remedy(ies) shall be selected by EID and presented to the public for comment. Upon evaluation of, and response to, public comment, a Final Remedy(ies) shall be selected by EID for implementation by the Permittee. The Permittee will furnish the personnel, materials, and services necessary to prepare the CMS, except as otherwise specified.

SCOPE

The Corrective Measure Study consists of four tasks:

- Task VII: Identification and Development of the Corrective Measure Alternative or Alternatives
- A. Description of Current Situation
 - B. Establishment of Corrective Action Objectives
 - C. Screening of Corrective Measures Technologies
 - D. Identification of the Corrective Measure Alternative or Alternatives
- Task VIII: Evaluation of the Corrective Measure Alternative(s)
- A. Technical/Environmental/Human Health/Institutional
 - B. Cost Estimates
- Task IX: Justification and Recommendation of the Corrective Measure or Measures
- A. Technical
 - B. Environmental

- C. Human Health
- D. Institutional

Task X: Reports

- A. Progress
- B. Draft
- C. Final

TASK VII: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Site Investigation (RSI, Task II) the Permittee shall identify, screen, and develop the alternative(s) for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the site and the known nature and extent of the contamination as documented by the RSI report. The Permittee shall provide an update to information presented in Task I of the RSI to the EID regarding previous response activities and any interim measures which have or are being implemented at the site. The Permittee shall also make a site-specific statement of the purpose for the response, based on the results of the RSI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee, in conjunction with EID, shall establish site specific objectives for the corrective action. These objectives shall be based on public health and environment criteria, information gathered during the RCRA Site Investigation, EPA/EID guidance and the requirements of any applicable State or Federal statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR §264.100. The objectives shall ensure that the Groundwater Protection Standards are not exceeded at

the point of compliance.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RSI and identify any technologies which are applicable to the site. The Permittee shall screen the technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site); and

3. Technology Limitations

The level of technology development, performance record, and inherent construction, operation and maintenance problems shall be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive

technology transfer or development.

D. Identification of the Corrective Measure Alternative(s)

The Permittee shall develop the corrective measure alternative(s) based on the corrective action objectives (Task VII.B.) and analysis of Corrective Measure Technologies (Task VII.C.). The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative(s). The alternative(s) developed should represent a workable number of options that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies, identified in Task VII.C.

TASK VIII: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passed the Initial Screening in Task VII and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates for each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical;

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure:

- (1) Effectiveness shall be evaluated in terms of the ability to perform intended

functions such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

(2) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

(1) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

(2) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions;

whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

(1) Constructability is determined by conditions both internal and external to the site conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the site (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities;

(2) Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider include fire, explosion, and exposure to hazardous substances.

2. Environmental;

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental

Assessment shall focus on site conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive area; and an analysis of measures to mitigate adverse impacts.

3. Human Health; and

The Permittee shall assess each alternative in terms of the extent which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected populations. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to EID.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include capital, and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

a. Direct capital costs include:

- (1) Construction costs: Cost of materials, labor (including fringe benefits and

worker's compensation), and equipment required to install the corrective measure alternative.

- (2) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is completed;
- (3) Land and site development costs: Expenses associated with purchase of land and development of existing property; and
- (4) Building and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

- (1) Engineering expenses: Costs of administration, design construction supervision, drafting, and testing of corrective measure alternatives;
- (2) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
- (3) Start-up and shakedown costs: Costs incurred during corrective measure start-up; and
- (4) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate site characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

- a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

- b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;
- c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;
- d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;
- e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues generated during operations;
- f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;
- g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;
- h. Maintenance reserve and contingency funds; Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and
- i. Other costs: Items that do not fit any of the above categories.

TASK IX: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURES OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environment criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. EID will select the

corrective measure alternative or alternatives to be implemented based on the results of Tasks VIII and IX. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;
2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and site conditions similar to those anticipated will be given preference;
3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and
4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) on the environment over the shortest period of time will be favored.

TASK X: REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results of Task VII through IX recommending a corrective measure alternative. Five (5) copies of the draft and final reports shall be provided to EID by the Permittee.

A. Progress

The Permittee shall at a minimum provide EID with signed progress reports every two months containing:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of all findings;
3. Summaries of all changes made in the CMS during the reporting period;
4. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period.
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during the reporting period;
8. Projected work for the next reporting period; and
9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft

The Report shall at a minimum include:

1. A description of the site;
 - a. Site topographic map and preliminary layouts.
2. A summary of the corrective measure or measures and rationale;
 - a. Description of the corrective measure or measures and rationale for selection;
 - b. Performance expectations;
 - c. Preliminary design criteria and rationale;
 - d. General operation and maintenance requirements; and
 - e. Long-term monitoring requirements.

3. A summary of the RSI and impact on the selected corrective measure or measures;
 - a. Field studies (groundwater, surface water, soil, air); and
 - b. Laboratory studies (bench scale, pilot scale).

4. Design and Implementation Precautions:
 - a. Special technical problems;
 - b. Additional engineering data required;
 - c. Permits and regulatory requirements;
 - d. Access, easements, right-of-way;
 - e. Health and safety requirements; and
 - f. Community relations activities.

5. Cost Estimates and Schedules:
 - a. Capital cost estimate;
 - b. Operation and maintenance cost estimate; and
 - c. Project schedule (design, construction, operation).

C. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from EID on the Draft Corrective Measure Study Report.

Site Submission Summary

A summary of the information reporting requirements contained in the Corrective Measure Study Scope of Work is presented below:

Site Submission

Due Date

Progress Reports
(Tasks VII, VIII, and IX)

Every two months

Site Submission

Due Date

Draft CMS Report
(Tasks VII, VIII, and IX)

90 days after
approval of the
Final RSI

Final CMS Report
(Tasks VII, VIII, and IX)

45 days after
EID and Public
comment on
the Draft CMS