Draft

Revision 2

Software Requirement Specification

for the

Yucca Mountain Project (YMP)

Environmental Impact Statement (EIS)

Comment Response Database (CRD) System

January 20, 1999

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Process Overview

The Environmental Impact Statement for the Yucca Mountain Project will be published and the public will have an opportunity to submit comments during a fixed period of time (currently defined as 90 days - August through October 1999). The following section contains a high-level overview of the entire process of collecting, storing, and responding to comments and reporting the results. Requirements for components and functions of the CRD system mentioned in this section are defined in greater detail in the sections following the process overview.

Comment Acquisition and Routing

Comments will be accepted in a variety of forms, including email, fax, letter, mail, public hearings, and correspondence with government officials. There will be no facility other than e-mail for submitting comments via the Internet. All comments will be transcribed to paper form if necessary and routed to a single point for initial processing.

The first processing step is the assignment of a unique document number to each comment document. The document number is affixed to each page of the document, to any attachments, and to the envelope in which a mailed comment was received. Then two copies (one working copy and a backup) of each document are made. The original comment document is then submitted to the YMP Records Processing System.

Comment Document Processing

The two document copies are delivered to the comment processing organization. The working copy is scanned and an image file is generated. A new entry for the comment document is then made in the CRD system. The information entered includes the document number, the document image, a document source type designator, date received, and information identifying the commentor. The image files are posted on the YMP Internet Web Site as the corresponding documents are received.

Comment Identification and Entry

Comment documents may contain multiple comments. Subject matter experts analyze the comment documents and identify comments. This process is referred to as comment identification or bracketing. All comment identification will be performed locally (in Las Vegas) by a small number of analysts.

Each identified comment is assigned an identifier and entered into the CRD system as a separate record. Information linking the comment back to its source comment document is always maintained for traceability. The comment text is entered along with additional information such as the type of document being commented on, the type of comment, and names of those assigned to be involved the response process.

The possibility of using Optical Character Recognition (OCR) to capture the comment text during the scanning process has been discussed. The current assumption is that a manual process will be used rather than OCR. Although the CRD system is the final repository for the comment text, the manner in which the text is captured from the comment document is external to the CRD system and no custom development or electronic linkage between the OCR process and the CRD system would be required.

Comment Rebracketing

Over the course of the comment period, modifications to the bracketing of a comment document may be required. This is known as comment rebracketing. It is accomplished by another iteration of the process described in the section above on comment document processing. The comments identified in the rebracketing of a comment document replace the comments identified in the previous bracketing.

Electronic Comment Bracketing

The possibility of acquiring software to support electronic bracketing of comments has been discussed as an alternative to manually marking individual comments on comment documents. It is believed that this would reduce the amount of work involved in both the initial comment identification and in rebracketing.

Although a search for products which provide this functionality is still being conducted, no viable candidates have been identified. The current assumption is that comments will be bracketed manually rather than electronically.

It should also be noted that although the CRD system must support required modifications to stored data introduced by rebracketing, the comment bracketing process itself is external to the CRD system. Therefore, it is expected that the introduction of electronic bracketing into the process would not have significant impact on design or implementation of the CRD system.

Response Development, Review, and Approval

A response is developed for each identified comment. The response is then reviewed by one or more designated individuals. The responder incorporates any modifications arising from the review process and submits the response for re-review and approval. If approval is granted the response is considered final and can no longer be modified by the response author. Otherwise an additional iteration(s) of the response and review process is performed. The response and review text from each iteration is saved as documentation of the process used to arrive at the final response.

Comment Response Document Generation

After the public comment period ends and approved responses have been written for all comments, the CRD system creates a final document in ASCII text format containing all comments and responses. A number of cross-reference indices into the comments and responses are also generated.

This comment and response document is further massaged in word processing software external to the CRD system to produce the final Comment Response Document and indices. The document will also be converted to PDF format and published on the YMP Internet Web Site.

The final Comment Response Document (and any additional related documents, systems, and information as required) are then submitted to the YMP Records Processing System.

Comment Documents Data Management

This section defines the requirements for the system functions that support the entry and editing of all data associated with comment documents.

Comment Document Images

The system must support the entry, storage, and retrieval of two scanned images of the original comment document. Image data format is TBD.

The first image is of the original, unbracketed comment document. It is entered into the system as part of the comment document record. A null value for this data element is not allowed.

The second image is of the comment document with comments bracketed. A null value for this data element is allowed because comments will not have been bracketed at the time the comment document record is created. However, the corresponding individual comment data records may not be created until this image has been entered into the system (?). If the document has only one comment there will be no bracketed image (?).

Date Comment Document Received

The system must require the input of the date the comment document was received. A null value for this data element is not allowed.

Comment Document Numbers

The system must require the input of the comment document number at the time a comment document record is initially entered. The value for this data element is the number affixed to the document - it is not generated by the CRD system. A null value for this data element is not allowed. The format of the comment document number is TBD.

Commentor Identification

The following commentor identification information is entered with each comment document:

- Name (last name, first name, and middle initial)

- Title
- Organization
- Address
- Phone number.
- Affiliation

All of the elements listed above will be stored as ASCII text values except Affiliation, which will be selected from the following set of values:

- Federal Government
- State Government
- Local Government
- Special Interest Group

Null values are not allowed for Name ("Anonymous" may be entered if no name is provided) but are allowed for the other data elements.

Comment Document Type

The valid types of documents are letter, postcard, fax, phone transcript, public hearing transcript, and petition. A set of codes will be used to signify these values. The system must require the user to enter one of the codes at the time a comment document record is initially entered. A null value for this data element is not allowed.

Comment Document Record Creation

The system must provide a way for the user to create a new comment document record in the CRD system consisting of a set of valid values for all data elements described above.

The system must ensure that the user performing this operation has the appropriate privilege. It must also automatically save the user name as part of the record. A null value for this data element is not allowed. The data element is not editable after the record has been created.

Comments Data Management

This section defines the requirements for the system functions that support the entry of all data associated with individual comments identified during the comment bracketing process.

Comment Identifier

The system must assign each comment an identifier when it is initially entered. This identifier together with the comment document number uniquely defines the comment. A null value for this data element is not allowed. The format of the identifier is TBD.

Comment Document Designator

The system must require the entry of the comment document designator at the time a comment is initially entered. The designator identifies the comment as being associated with either the Environmental Impact Statement, the Site Recommendation, or the License Application document. A null value for this data element is not allowed.

Comment Text

The system must support the entry of the full comment text. A null value for this data element is allowed only when the comment is linked to a comment summary. The maximum size of this field is TBD (unlimited is desired).

Comment Bin and Rebinning

This element is also referred to as the comment category or subject index. It refers to the general subject of the comment. The valid category values are TBD. A null value for this data element is not allowed.

The system must allow the user to change the category to another valid value after the initial data entry is complete. This process is referred to as rebinning. A user must have system administrator privilege to rebin a comment.

Comment Response, Review, and Approval Information

The system must support the entry of the responder name and response due date. The responder must be selected from the list of authorized responders (those individuals with responder privilege). Null values are not allowed for either of these data elements.

The system must also support the entry of the names of individuals responsible for reviewing the response. These names must be selected from a list of authorized reviewers (those individuals with reviewer privilege). At least one reviewer must be specified. The maximum number of reviewers that may be specified is limited only by the number of authorized reviewers.

The system must also support the entry of the names of the individual responsible for approving the response (or is the approval privilege global or is it equivalent to being a system administrator?). The approver must be selected from the list of authorized approvers (those individuals with approval privilege). Null values are not allowed for this data element.

Comment Type

This is identified in the Jason list of requirements "(e.g. unique, duplicate of)" but is not understood and is TBD. Would a comment summary be one type of comment? What are the others?

Comment Record Creation

The system must provide a way for the user to create a new comment record in the CRD system consisting of a set of valid values for all data elements described above.

The system must ensure that the user performing this operation has system administrator privilege. It must also automatically save the user name as part of the record. A null value for this data element is not allowed. The data element is not editable after the record has been created.

Comment Summaries

The system must provide support for the entry of comment summaries. Comment summaries are composed internally rather than received from the public. They may be optionally entered into the system at any time. They

are intended to be used whenever it is determined that the volume of similar comments warrants summarization.

The system must allow the user to link existing comments to a comment summary and also to link a new comment to an existing comment summary. Whenever a comment is linked to a comment summary the comment text field may be null.

Response Writing, Review, and Approval

This section defines the requirements for the system functions that support the development, review, and approval of comment responses.

Pre-approved Responses

The system must support the entry and storage of "canned", pre-approved responses to anticipated comments. The text of these responses will be developed and provided prior to initial system deployment. They will be entered into the system and available for reference by response writers as they develop comment responses.

The specific manner in which pre-approved responses are to be used is TBD. However, it is anticipated that the response writer will have the option of creating a reference to one or more of the pre-approved responses in place of an entered text response, as opposed to having access to pre-approved response text which would be cut and pasted into the response field as appropriate.

Support for responses consisting of both entered text and pre-approved response references is TBD. The review and approval process for a response consisting of pre-approved responses does not differ from the normal process.

Response Status

The system must track the current status of each response. The valid values are "Incomplete", "Complete", "Ready for Approval", and "Approved". The initial value is "Incomplete". A null value for this data element is not allowed.

Response Writing

The system must support the development of a response to each comment that has been entered into the system. The individual identified by the responder data field of a comment record is the only one that is allowed to create and edit the response to that comment. The response writer must be able to change the response status to "Complete" after entering the response.

This will lock the response (making it non-editable by the responder) and initiate the review of the response.

Response Text

The system must provide a data element supporting entry and storage of initial and modified versions of the response text. A null value for the initial response is not allowed unless the response is a reference to a pre-approved response. The modified version may be null. The maximum size of these fields is TBD (unlimited is desired).

Date Response Created

The system must generate and store the date the comment response was created. A null value for this data element is not allowed.

Response Review

The system must support the entry and storage of a response review for each of the reviewers identified in a comment data record.

The system must allow the reviews of a response to be entered into the system concurrently. Each review will initially be marked "Incomplete". Each reviewer must be able to mark their review "Complete" when they are finished with it. Each reviewer will be able to view the text that has been entered and saved for all other reviews.

When all reviews are marked "Complete", the response writer may optionally enter a modified version of the response. It is considered a new revision of the response and is subject to another round of comments. The modified response and review texts must not overwrite the previous versions, which are saved to document the response development process and must be viewable with the rest of the data associated with the comment. When all comments have been resolved and the response text is ready for approval, the responder then marks the response status as "Ready for Approval".

Response Approval

When the response status is marked "Ready for Approval" it is reviewed by the designated approver. The approver must be able to change the status

from "Complete" to either "Approved" or "Incomplete" depending on the outcome of the approval process. If the response is disapproved, another iteration of the response/review cycle is initiated (see next section).

The response remains locked when the status is "Approved". Only a system administrator will have the ability to change the status once it is in the "Approved" state. This action will be taken only in cases where an approved response needs to be reopened for revision. This case will be handled as another iteration of the response/review cycle. That is, the response status is set to "Incomplete" and a new revision of the response is developed.

Date Response Approved

The system must generate and store the date the comment response was approved. A null value for this data element is allowed initially.

Multiple Response/Review Cycles

The system must support at least TBD iterations of the response review cycle. All the data elements associated with an iteration (the initial and modified responses and the associated reviews) must be saved and be viewable with the rest of the information pertaining to the comment and response.

System Output Requirements

This section defines the requirements for outputs that the CRD system must produce.

Comment Response Document

The system must produce a document containing all comments and responses in ASCII text format which will be used to produce the final Comment Response Document. This document will not contain any scanned document images.

Information on specific report formats and additional details are TBD.

Comment Response Document Indices

The system must also produce cross reference indices of the Comment Response Document in the following formats:

- Alphabetically by commentor
- Comment document number
- Response - Comment Contributor Correlation

Preformatted Reports

The system must provide the capability to produce preformatted reports on comments by:

- Commentor
- Comment Identifier
- Organization
- City
- State
- Zip Code
- Area Code
- Date received
- Bin
- Response writer assignment

- Response status

The system must also produce a status report containing information on number of reviews and/or responses completed and pending sorted by reviewer and/or response writer.

Information on specific report formats and additional details are TBD.

Ad hoc Reports

The system must also provide an ad hoc report generation capability. The user must be able to customize reports by specifying:

- Selection of data matching a pattern applied to data elements
- Inclusion or exclusion of specific date elements
- Sort order

Information on specific report formats and additional details are TBD.

Comment Document Posting on YMP Internet Web Site

Comment documents images must be posted on the YMP Internet Web Site as they are received and entered into the CRD system. The display format is TBD. The documents must be posted within TBD days of their entry in the CRD system.

User Interface Requirements

All comment data in the CRD system must be traceable back to the original comment document. Every user screen containing comments, responses, or response reviews must allow the user to view the original (unbracketed and bracketed?) comment document image(s). The initial view must display the page on which the comment starts. The capability to scroll the document image vertically in both directions from that initial point and to close the view must be provided.

Additional specifics of the user interface layout are TBD.

System Privileges and User Authentication

System Access

All access to the system will be via username/password authentication. That is, all users must have an established system account and enter their password each time they access the system.

Response, Review, and Approval Privileges

Privileges for access to system functions will be granted to users based on need. The system must ensure that the user has the required privilege before allowing access to a system function. An individual may have one or more of these privileges at a given time. Access to the comment response writing, review, and approval functions will be controlled in this manner.

System Administrators

A system administrator user class must also be provided. Administrators will also authenticate via username/password and have access to all system functions described above.

Administrators will be the only users with the ability to perform certain privileged system functions and modify system data elements. A list of these functions is TBD. As an example, it is expected that administrator privilege will be required to rebin comments, to add a new bin to the subject index, to change the designated comment responder, and to set up user accounts and modify user privileges.

User Training and Documentation

User Training

Classroom-style training with written classroom materials must be provided. The training must support two classes of users: system administrators and users involved in response development and review. The training must cover basic system functions available to all users as well as the specific privileged functions available to the class of users being trained

User Manual

A user manual is not required.

Online Help

Online help is not required.

System Documentation

System design and implementation information must be well documented since it is anticipated that the software will be reused by other organizations to support the comment and response process for the Site Recommendation and License Application documents. Specifics are TBD.

Miscellaneous Requirements

Capacities

The system must have the capacity to support TBD comment documents containing a total of at least 15000 individual comments of size TBD. The system must also support one response (including reviews and multiple revisions of responses) per individual comment.

The system must have the capacity to support at least TBD comment summaries of size TBD and at least TBD pre-approved responses of size TBD.

The system must support TBD concurrent users.

Network Access

Most users will have access to the system via a permanent connection to the YMP internal network.

The use of dialup connections to the internal network has been discussed for remote users without permanent network connections. It was noted that the bandwidth limitations of dialup connections may reduce or eliminate the usability of system functions involving data transfers of significant size.

The possibility of making the CRD interface accessible to remote users via the YMP Internet web site was also discussed. It was also noted that a virtual private network would be another approach to providing remote access to the YMP network.

Searching

The system must support global searching based on user-entered text strings. Comments, responses, and response reviews are to be searched for the text. Global text replacement is not required. Full-text search capability is not required. The specific formats for the interface components to support search text entry and results presentation are TBD.

System Activity Logging

A log file of system activity must be generated. It will track only a minimal amount of system event information that has been deemed essential to capture. The log must include a history of all user logins. Additional elements to be logged are TBD. File format is TBD.

Work Pending Notifications

The ability to provide users with notifications of work pending has been discussed. Electronic mail and work queues were two approaches that were identified. It was pointed out that in the email approach regular users would receive an excessively large number of messages and that it would be necessary to set filters (set to none, filter, or all) on a per user basis to prevent this. At this time the notifications are not considered necessary and their implementation is not required.

Implementation Priorities

Most of the required system functionality will be implemented in Phase I of the development cycle. However, the system functions which generate the final Comment Response Document and associated indices have a lower implementation priority because they will not be used during the period in which comments are being accepted and processed. They will be developed in Phase II, which will run concurrent with the initial use of the system during the comment submission period. Any additional functionality that can be identified as not being required during the initial period will also be given a lower priority and developed during Phase II.