OpenNode2

RCRAInfo Outbound 5.7
Data Exchange
Implementation Guide
(.NET)

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Prepared By:

WINDSOR
SOLUTIONS

4386 SW Macadam Ave, Suite 101
Portland, Oregon 97239
(503) 675-7833

Environmental Information
eXchange
Network

Revision History

Date	Author	Changes	Version
2/16/2015	Windsor	Initial version	1.0
4/13/2018	Windsor	Updated for version 5.6 schema. Includes new GetCurrentHandler solicit (REPORT_UNIVERSE)	1.1
5/13/2019	Windsor	Clarified Delete before Insert behavior	1.2
6/17/2019	Windsor	Updated for version 5.7 schema. Includes new eManifest solicit	1.3
10/29/2019	Windsor	Updated to include implementation instructions for the new RCRA Reporting database.	1.4

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Data Exchange Overview

The purpose of this document is to provide detailed instructions for the installation and configuration of the Exchange Network Resource Conservation and Recovery Act information system (RCRAInfo) Outbound data exchange on the .Net implementations of the Exchange Network OpenNode2 (OpenNode2).

The RCRAInfo Outbound data exchange offers a data service that is used to **solicit and retrieve** data from the EPA RCRAInfo system and load the data into the RCRA Outbound staging tables.

Further detail about the RCRAInfo Outbound data exchange is available in the Flow Configuration Document (FCD) published at exchangenetwork.net.

The RCRAInfo Outbound data exchange configuration process involves two main steps: 1) install and configure the RCRAInfo data flow 2) configure exchange services and node job schedules. The rest of this document will describe these two processes in detail. To download the latest .NET Node and obtain the RCRA Outbound plugin, please click Download .Net at the following GitHub website: https://windsorsolutions.github.io/opennode2/.

Terminology

Outbound data flow refers to the ability to obtain (solicit, query) data from the EPA. In other words, it is data outbound from the EPA.

Inbound data flow refers to the ability for a partner to push data to another partner. In the case of EPA, the data is going from the State, and data is coming Inbound into the EPA.

This document describes the RCRA Outbound data flow. Separate documentation can be found on GitHub that describes the RCRA Inbound data flow.

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RCRA Reporting Database

A new optional component has been included with the overall RCRA Outbound data flow plugin. This new component includes a database structure, called RCRA_REPORTING and a set of database views and procedures. The purpose of this new component is to provide States the ability to replicate the data located in RCRA Info for the State, into a local environment.

The RCRA outbound staging tables contain a subset of data, based on the data solicited from the EPA. The staging tables can be considered more of a temporary holding tank, or pass-through, where it is removed/deleted during the next solicit. For example, if Hander data is solicited with a Change Date of 01/01/2019 and an End Date of 1/30/2019, then the staging tables will be filled with Hander data that has been inserted or updated between those dates. During the next solicit, Handler data is requested with a Change Date of 2/1/2019 and an End Date of 2/28/2019, then the previously held data is removed, and this new February dataset is inserted. This works well when the data is moving from this staging database to another database, such as a local Hazardous Waste program database. But it does not provide a full picture of RCRA data for the State.

The RCRA Reporting database and associated components provides the ability for the data to be incremented over time. Seeding the database going back to the 1980's for most payloads, and June 2018 for eManifest data provides a baseline of data. Then running the solicits on a nightly basis allows the data to be incremented using smaller datasets, where any new or updated data will be incorporated in the RCRA Reporting database. The views and procedures included take the data from staging and

incorporate it into the RCRA Reporting database. This entire process can be initiated and maintained automatically using the current RCRA Outbound plugin in OpenNode2.

Important 5.7 Updates

The newest schema version, 5.7, introduced several important changes. The new GeEMByState and GetEMHandlerByID allows users to download the new eManifest data. Additionally, new attributes have been added to the Handler payload (GetHDDataByState) including Acknowledge Flag Indicator, Include In National Report Indicator, LQHUW Indicator and HD Report Cycle Year. Also, the Current Handler (Report Universe) xsd file name was changed, making it unusable using the 5.6 plugin. In order to obtain Current Handler data, you must upgrade to 5.7.


Plugin Architecture

The diagram below shows the architecture of a typical OpenNode2 Outbound plugin and how services that access the plugin's functionality are configured by a node administrator.
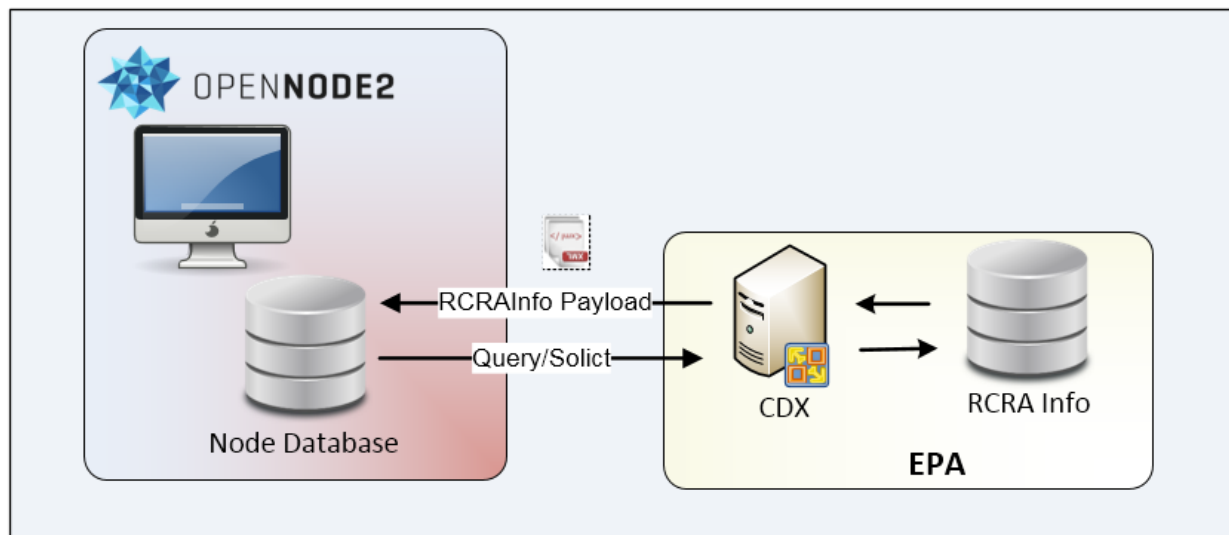
A plugin contains one or more **implementers**. Implementers are canned functionality that are specific to the data exchange. An implementer performs some task, such as composing XML from a series of staging tables.

A node administrator exposes the functionality in an implementer by creating **services**. When a service is created, an implementer must be chosen. Each service may have one or more configuration arguments, defined by the implementer. For example, the service may require that a database connection or node partner URL be provided. Services can be made available to external partners in the form of a query or solicit or as an inbound submission processor. "Task" services are internal only and are accessed via a **schedule**. Schedules also can have configuration arguments which are used by the plugin implementer assigned to the schedule.

An additional component that can be implemented as part of this plugin is the RCRA Reporting database. The diagram below depicts how this component extends the typical plugin implementation. When XML files are obtained from the EPA, the data is loaded into the staging database. If a post processing stored procedure is established in the plugin setup, then this will be executed automatically, and will migrate the data into the RCRA Reporting database.
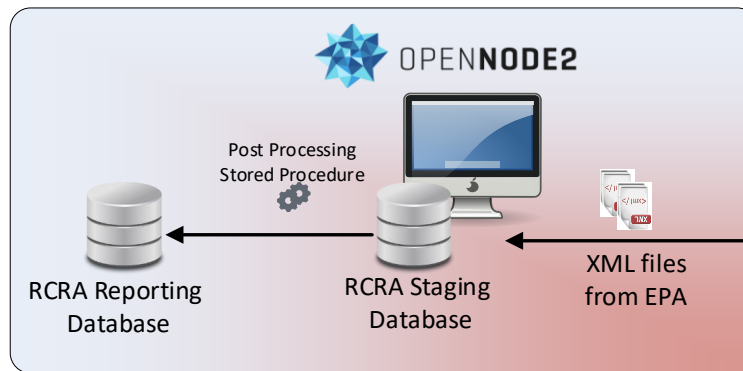
RCRAInfo Data Flow Deployment

NOTE: This deployment and configuration guide is for the **Java version** of OpenNode2 with an **Oracle** database platform.

Install Data Objects for RCRAInfo Data Flow

Install RCRAInfo Data Objects for Node Flow Database

1. Open **MS SQL Server Management Studio**

2. Create a new database called NODE_FLOW_RCRA (or something similar)

3. For brand new installations of this plugin, you will want to set up the staging tables using the full CREATE scripts. Open and execute RCRA_5.7_ ORA_DDL.sql for an Oracle environment, or RCRA_5.7_SQL_DDL.sql for a SQL Server environment.

4. If you already have existing version, you can use the upgrade scripts. Open and execute RCRA_5.6_to_5.7_ ORA_DDL.sql for an Oracle environment, or RCRA_5.6_to_5.7_ SQL_DDL.sql for a SQL Server environment.

Configure Partner and Data Sources

For the following steps, use the appropriate OpenNode2 Administration Utility.

Configure Network Partner

1. Click the **Configuration** button

2. Click the **Network Partners** button

3. Click **Add Partner**, and enter the following values for the new Network Partner:

   - **Name**: CDX RCRA Production *["Test" or "Production"]*

   - **Endpoint URL** (test): *https://testngn.epacdxnode.net/ngn-enws20/services/NetworkNode2Service*

   - **EndPoint URL** (production): *https://cdxnodengn.epa.gov/ngn-enws20/services/NetworkNode2Service*

4. **Version**: Select *Node v2.0* from the drop-down list

Configure Node Data Sources

1. Click the **Configuration** button

2. Click the **Data Sources** button

3. Click **Add Data Source**, and enter the following values for the Node Flow staging tables where the RCRA outbound tables are located:

   - **Name**: *RCRA-OUTBOUND*

   - **Provider:** *System.Data.SqlClient*

   - **Connection**: Server=[IP address of test or production server];Database= NODE_FLOW_INBOUND;User Id=[MyUser;Password];Password=[MyPassword]

Configure Node Exchange and Services

For the following steps, use the appropriate OpenNode2 Administration Utility.

Configure Exchange

1. Click on the **Exchanges** tab

2. Click the **Add Exchange** button**,** and enter the following values for the new Exchange:

   - **Name**: *RCRA Outbound*

   - **Description**: *RCRAInfo Outbound (from EPA) Data Exchange*

   - **Contact**: Select *YourEmailHere@State.gov* from the drop-down list

   - **Web Info**: http://www.exchangenetwork.net/data-exchange/rcrainfo/

   - **Protected**: Checked/True

3. Click the **Save** button

4. Click the **Uploaded Plugin** button

5. Click the **Choose File** button, then select the [PLUGIN FILENAME].zip file (found in the GetRCRAInfoData_57 folder)

   OpenNode2 and all related .Net plugins can be found at GitHub, by clicking Download .Net.

6. Select *RCRA Outbound* from the **Exchange** drop-down

Configure Exchange Services

DownloadAndImport

The DownloadAndImport looks for pending solicits and checks the status at the EPA. If the status at the EPA is "completed" then the processor will download the file and insert the data into the RCRA Outbound staging tables. Only one processor service needs to be established to accommodate all solicits.

1. Under the **RCRA Outbound (protected)** exchange, click the **Add Service** button, and enter the following values for the new Service.

- **Name**: *DownloadAndImportRCRAInfoData*

- **Implementer**: Select *DownloadAndImportRCRAInfoData* from the drop-down list

- **Type**: *Task*

- **Delete Existing Data Before Insert (True or False):** Setting to true will remove data from the staging database related to the payload/module that it is trying to process, otherwise the data will append.

- **Max Check Status Days (default: 2 days)**: *7*

- **Postprocessing Stored Procedure Execute Timeout (in seconds)**: <leave blank>

- **Postprocessing Stored Procedure Name**: <leave blank or enter Stored procedure name that will run after the download occurs. This typically will move data from your staging tables to a reporting or program database.>

- **Data Destination**: Select *NODE_FLOW_RCRA* from the drop-down list

Solicit (Get Data)

Solicit services will provide the ability to obtain data from the EPA. Only one is required to be established for all payloads (HD, PM, CE, EM, etc).

2. Under the **GetRCRAInfoData (protected)** exchange, click the **Add Service** button, and enter the following values for the new Service.

- **Name**: *SolicitRCRAInfoData*

- **Implementer**: Select *SolicitRCRAInfoData* from the drop-down list

- **Type**: *Task*

- **Solicit Endpoint Username**: *<leave blank>*

- **Solicit Partner Name**: *RCRA v2 ["Test" or "Production"]* (same value that was entered for Network Partner Name)

Configure Node Job Schedules

Scheduled Node jobs will be required for the RCRAInfo Outbound Data Flow implementation.

Note, <u>ByState</u> is most common. There is no need to establish ByHandler if you are looking for all data for a given state.

Configure GetRCRAHDDataByState Schedule (Handler)

1. Click the **Schedules** tab

2. Click the **Add Schedule** button, and enter the following values for the new Schedule

- **Name**: *GetRCRAHDDataByState*

- **Exchange**: Select *RCRA Outbound* from the drop-down list

- **Availability**

    i. **Starts On**: <Sunday's date>

      ii.   **Ends On**: <Sunday's date + 10 years)

      iii.   **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

      i.   Select the **Results of local service execution** option

      ii.   **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

      iii.   **Additional Parameters**

        Select the **By Name** option, and add three parameters in the following order:

          1. **serviceName** = *GetHDDataByState*

          2. **state** = *Two Letter State Code (e.g. 'HI')*

          3. **endDate:** *(optional – and only available for Handler, Current Handler and eManifest). By using end date (same format as Change Date), you can obtain data using a date range.*

- **Result Process**

      i.   Select the **None** option

3. Click the **Save** button

Configure GetRCRACEDataByState Schedule (Compliance)

1. Click the **Schedules** tab

2. Click the **Add Schedule** button, and enter the following values for the new Schedule

- **Name**: *GetRCRACEDataByState*

- **Exchange**: Select *RCRA Outbound* from the drop-down list

- **Availability**

      i.   **Starts On**: <Sunday's date>

      ii.   **Ends On**: <Sunday's date + 10 years)

      iii.   **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

      i.   Select the **Results of local service execution** option

      ii.   **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

      iii.   **Additional Parameters**

          Select the **By Name** option, and add three parameters in the following order:

             1.   **serviceName** = *GetCEDataByState*

             2.   **state** = *Two Letter State Code (e.g. 'HI')*

             3.   **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**

      i.   Select the **None** option

3.   Click the **Save** button

Configure GetRCRAGSDataByState Schedule (GeoSpatial)

1.   Click the **Schedules** tab

2.   Click the **Add Schedule** button, and enter the following values for the new Schedule

- **Name**: *GetRCRAGSDataByState*

- **Exchange**: Select *RCRA Outbound* from the drop-down list

- **Availability**

      i.   **Starts On**: <Sunday's date>

      ii.   **Ends On**: <Sunday's date + 10 years)

      iii.   **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

      i.   Select the **Results of local service execution** option

      ii.   **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

      iii.   **Additional Parameters**

          Select the **By Name** option, and add three parameters in the following order:

             1.   **serviceName** = *GetGSDataByState*

             2.   **state** = *Two Letter State Code (e.g. 'HI')*

             3.   **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**

      i.   Select the **None** option

3.   Click the **Save** button

Configure GetRCRAPMDataByState Schedule (Permitting)

1. Click the **Schedules** tab

2. Click the **Add Schedule** button, and enter the following values for the new Schedule

   - **Name**: *GetRCRAPMDataByState*

   - **Exchange**: Select *RCRA Outbound* from the drop-down list

   - **Availability**

     i. **Starts On**: <Sunday's date>

     ii. **Ends On**: <Sunday's date + 10 years)

     iii. **Run Time**: *02:00 AM*

   - **Frequency**: *1* times per *Week*

   - **Data Source**

     i. Select the **Results of local service execution** option

     ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

     iii. **Additional Parameters**

       Select the **By Name** option, and add three parameters in the following order:

       1. **serviceName** = *GetPMDataByState*

       2. **state** = *Two Letter State Code (e.g. 'HI')*

       3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

   - **Result Process**

     i. Select the **None** option

3. Click the **Save** button

Configure GetRCRACADataByState Schedule (Corrective Action)

1. Click the **Schedules** tab

2. Click the **Add Schedule** button, and enter the following values for the new Schedule

   - **Name**: *GetRCRACADataByState*

   - **Exchange**: Select *RCRA Outbound* from the drop-down list

   - **Availability**

     i. **Starts On**: <Sunday's date>

     ii. **Ends On**: <Sunday's date + 10 years)

     iii. **Run Time**: *02:00 AM*

   - **Frequency**: *1* times per *Week*

   - **Data Source**

i. Select the **Results of local service execution** option

ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

iii. **Additional Parameters**

Select the **By Name** option, and add three parameters in the following order:

1. **serviceName** = *GetCADataByState*

2. **state** = *HI*

3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

- **Result Process**

    i. Select the **None** option

3. Click the **Save** button

Configure GetCurrentHandlerByState Schedule (Current Handler – Report Universe)

1. Click the **Schedules** tab

2. Click the **Add Schedule** button, and enter the following values for the new Schedule

- **Name**: *GetCurrentHandlerByState*

- **Exchange**: Select *GetRCRAInfoData* from the drop-down list

- **Availability**

    i. **Starts On**: <Sunday's date>

    ii. **Ends On**: <Sunday's date + 10 years)

    iii. **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

    i. Select the **Results of local service execution** option

    ii. **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

    iii. **Additional Parameters**

    Select the **By Name** option, and add three parameters in the following order:

    1. **serviceName** = *GetCurrentHandlerByState*

    2. **state** = *HI*

    3. **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

    4. **endDate:** *(optional – and only available for Handler, Current Handler and eManifest). By using end date (same format as Change Date), you can obtain data using a date range.*

- **Result Process**

      i.   Select the **None** option

3.   Click the **Save** button

Configure GeteManifestByState Schedule (eManifest)

1.   Click the **Schedules** tab

2.   Click the **Add Schedule** button, and enter the following values for the new Schedule

- **Name**: *GetEMByState*

- **Exchange**: Select *GetRCRAInfoData* from the drop-down list

- **Availability**

      i.   **Starts On**: \<Sunday's date\>

     ii.   **Ends On**: \<Sunday's date + 10 years)

    iii.   **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

      i.   Select the **Results of local service execution** option

     ii.   **From**: Select *RCRA Outbound – SolicitRCRAInfoData* from the drop-down list

    iii.   **Additional Parameters**

          Select the **By Name** option, and add three parameters in the following order:

         1.   **serviceName** = *GetEMDataByState*

         2.   **state** = *HI*

         3.   **changeDate** = *1950-01-01 (Note, using NOW – 7 will obtain all data that has been added or updated going back 7 days)*

         4.   **endDate:** *(optional – and only available for Handler, Current Handler and eManifest). By using end date (same format as Change Date), you can obtain data using a date range.*

- **Result Process**

      i.   Select the **None** option

3.   Click the **Save** button

Configure DownloadAndImportRCRAInfoData Schedule

1.   Click the **Schedules** tab

2.   Click the **Add Schedule** button, and enter the following values for the new Schedule

- Name: *DownloadAndImportRCRAInfoData*

- Exchange: Select *GetRCRAInfoData* from the drop-down list

- **Availability**

      i.   **Starts On**: <Saturday's date>

      ii.   **Ends On**: <Saturday's date + 10 years)

      iii.   **Run Time**: *02:00 AM*

- **Frequency**: *1* times per *Week*

- **Data Source**

      i.   Select the **Results of local service execution** option

      ii.   **From**: Select *RCRA Outbound – DownloadAndImportRCRAInfoData* from the drop-down list

      iii.   **Additional Parameters**

         None

- **Result Process**

      i.   Select the **None** option

3. Click the **Save** button

Installing the RCRA Reporting Components

To host your State's RCRA dataset locally, including eManifest data, then you may be interested in installing the RCRA Reporting components. This is mainly comprised of installing data objects, including tables, views and stored procedures.

Installing RCRA Reporting provides a means to "seed" RCRA data for your State going back to 1980. After the seeding process, you can then run a nightly or weekly process that updates the RCRA Reporting database incrementally.
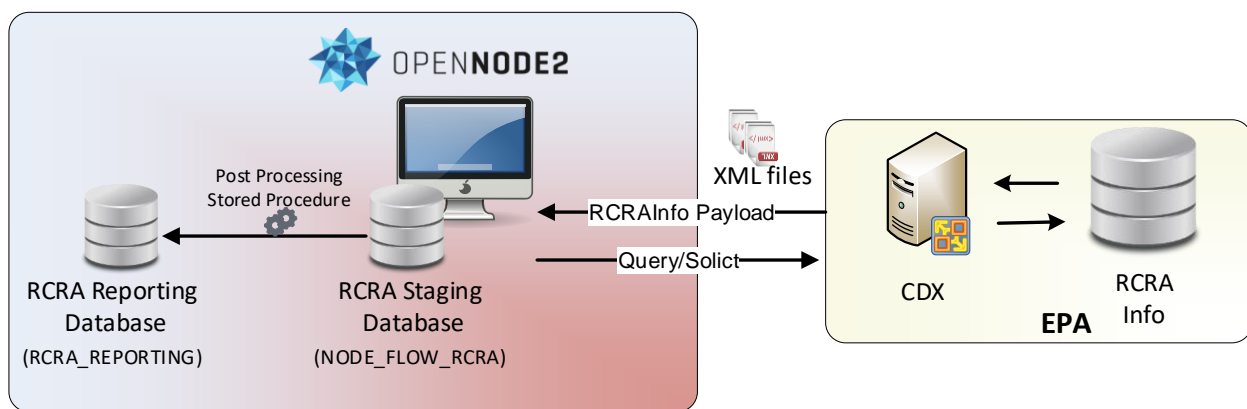
Install Data Objects for RCRAInfo Data Flow

1. Open **Oracle SQL Developer (or other Oracle SQL tool) or SQL Server Management Studio**

2. Create a new database (SQL Server) or schema (Oracle) called RCRA_REPORTING.

3. For brand new installations of the RCRA Reporting components, you will want to set up the tables using the full CREATE scripts. Open and execute

RCRA_REPORTING_5.7_ORA_DDL.sql for an Oracle environment, or
RCRA_REPORTING_5.7_SQL_DDL.sql for a SQL Server environment.

4. Special Note: Because synonyms are used to point back to the staging tables, it is important to know the name of the RCRA outbound staging database. The scripts assume that the name is NODE_FLOW_RCRA as the initial instructions imply. If this is not the name of your staging schema, then you will need to alter the RCRA Reporting SQL by locating the CREATE SYNOMYN scripts and replacing NODE_FLOW_RCRA with your staging database/schema name.

5. If you already have existing version of the RCRA Reporting components, you would typically use the upgrade scripts. Since this is the initial introduction for these components, there are no upgrade scripts presently.

6. Once the database is established, ensure that the user that has rights to the NODE_FLOW_RCRA database also has the same permissions to the RCRA_REPORTING database. At a minimum this user will need SELECT, INSERT, DELETE, UPDATE, and EXECUTE permissions. It is important to use the same user in this instance.

Setting up the Plugin to utilize the RCRA Reporting Database

The data services and schedules already set up as part of the previous instructions can all be used to assist in the population of the RCRA Reporting database. *Note: The following section assumes that the RCRAInfo Data Flow Deployment starting on page 4 has been completed.*

Configuring the Download and Import Data Service (download and import)

Under the RCRA Info Outbound exchange, find the service called DownloadAndImpoerRCRAInfoData. This is the service that downloads solicited XML files and loads them into the NODE_FLOW_RCRA staging database. In order to move the data from the staging NODE_FLOW_RCRA database, a stored procedure should be entered.

- **Stored Procedure:** Name of the post processing stored procedure including in the installation package, called **RCRA_MERGE_DATA.** This stored procedure will run after the data has been successfully loaded into the staging tables (NODE_FLOW_RCRA). Note: you may need to fully qualify the stored procedure name by appending the database/schema name to the front.

- **Data Source**: This will still be pointed at the staging NODE_FLOW_RCRA database.

Data Exchange Manager
Manage Exchange Service

This screen allows you to configure or add new services for a selected exchange. Examples:
"GetFacilityByChangeDate": return all facilities for a passed-in state USPS code and change date
"GetFacilityByName": return all facilities matching a wild-card name search.

Exchange: GetRCRAInfoData

Name: DownloadAndImportRCRAInfoData57_SQL

Implementer: DownloadAndImportRCRAInfoData (v4.0.17.1283)

Type: Task

Active: ☑ *Note: Making this service inactive will prevent it from being accessible using the Web Service interface.*

Arguments: Delete Existing Data Before Insert (True or False)   Use global value ☐
True

Max Check Status Days (default: 2 days)   Use global value ☐
1

Postprocessing Stored Procedure Execute Timeout (in seconds)   Use global value ☐
17000

Postprocessing Stored Procedure Name   Use global value ☐
RCRA_PROCESSOR

Data Sources: Data Destination
NODE_FLOW_RCRA_57

Cancel   Save   Delete

Configuring the RCRA Solicit Schedules

Seeding the database

The first step is to load RCRA data going back to 1980 when the RCRA program started. Each payload schedule needs to be configured by setting the **Change Date to 1980-01-01**.

The schedule should then be manually run by clicking Save and Run Now. This process can take a long time, up to 8 hrs depending on the payload (HD take a long time, while FA typically takes less then 30 mins). For HD, the payload accepts an End Date parameter. This allows you to obtain data incrementally. To do this you can enter **Change Date to 1980-01-01 and End Date 1990-01-01**. You will want this to fully complete before you do another 5- or 10-year increment. If endDate parameter does not exist in your configuration, you can add it by clicking the green plus icon, and typing 'endDate' into the Name column.

Additional Parameters:	● By Name ○ By Index	
Name	**Value**	✚
endDate	1990-01-01	✚ ✖
serviceName	GetEMDataByState	✚ ✖
state	VT	✚ ✖
changeDate	1980-01-01	✚ ✖

After the solicit completes (refreshing the status), you can then run the submission processor (above), which will download the XML and load it into the staging and then RCRA Reporting database. This as well can take a while depending on the file size.

It is recommended to do this one payload at a time, for example, start with FA, solicit the data going back to 1980, then run the submission processor. Once complete move onto CA, then PM, etc, etc.

Nightly Process

After the data has been seeded, it is time to set up the schedules to run on a nightly basis. To do this, you will want to set the **changeDate to NOW – 7**. This will allow you to obtain a week's worth of changes on a nightly basis. This helps in the event that the service did not run correctly, one night, and it will go back 7 days so that you do not miss the evening that it may have gone down.

Additional Parameters:	● By Name ○ By Index	
Name	**Value**	✚
changeDate	Now - 7	✚ ✖
state	VT	✚ ✖
serviceName	GetHDDataByState	✚ ✖

It is recommended to set these schedules up starting late in the evening or early morning in 30- to 45-minute increments. And then have the processor schedule set up one hour after the last solicit is scheduled. The example below shows schedules starting at 11:59am, and then the subsequent schedules in 45-minute increments.

Schedule example:

Availability: Starts On: 2015-06-30

Ends On: 2025-06-23

Run Time: 03:30 AM (hh:mm am/pm)
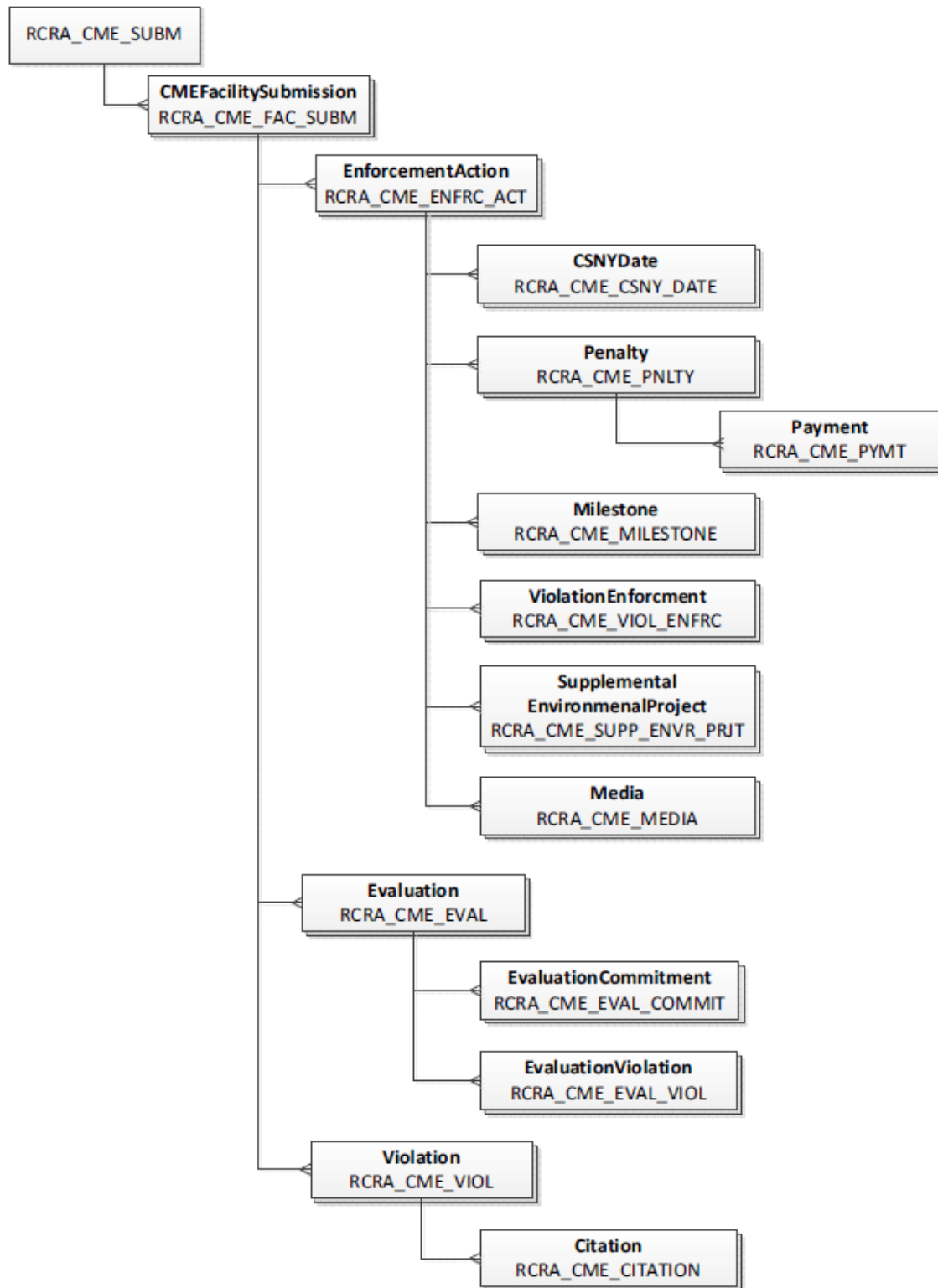
Frequency: 1 Day

Appendix A: Staging Table Diagrams

The diagrams below show the relationship between the major RCRA schema components and their corresponding OpenNode2 staging table name.
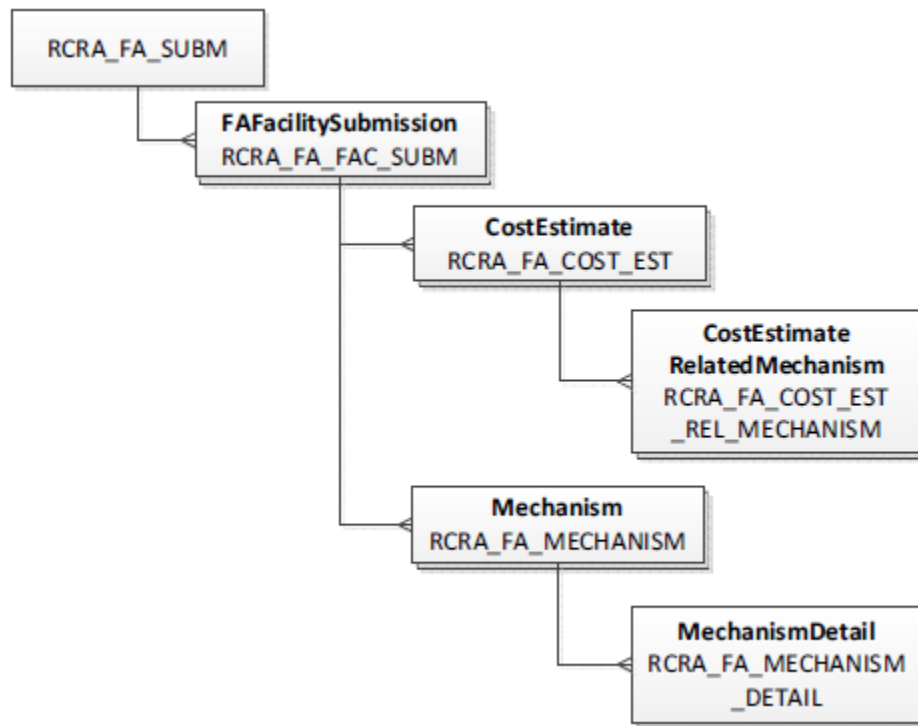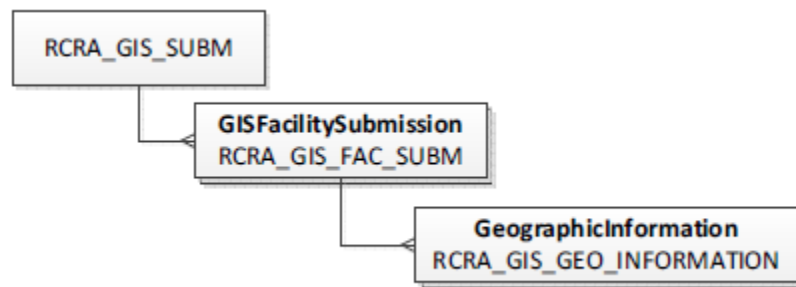
Handler (HD)
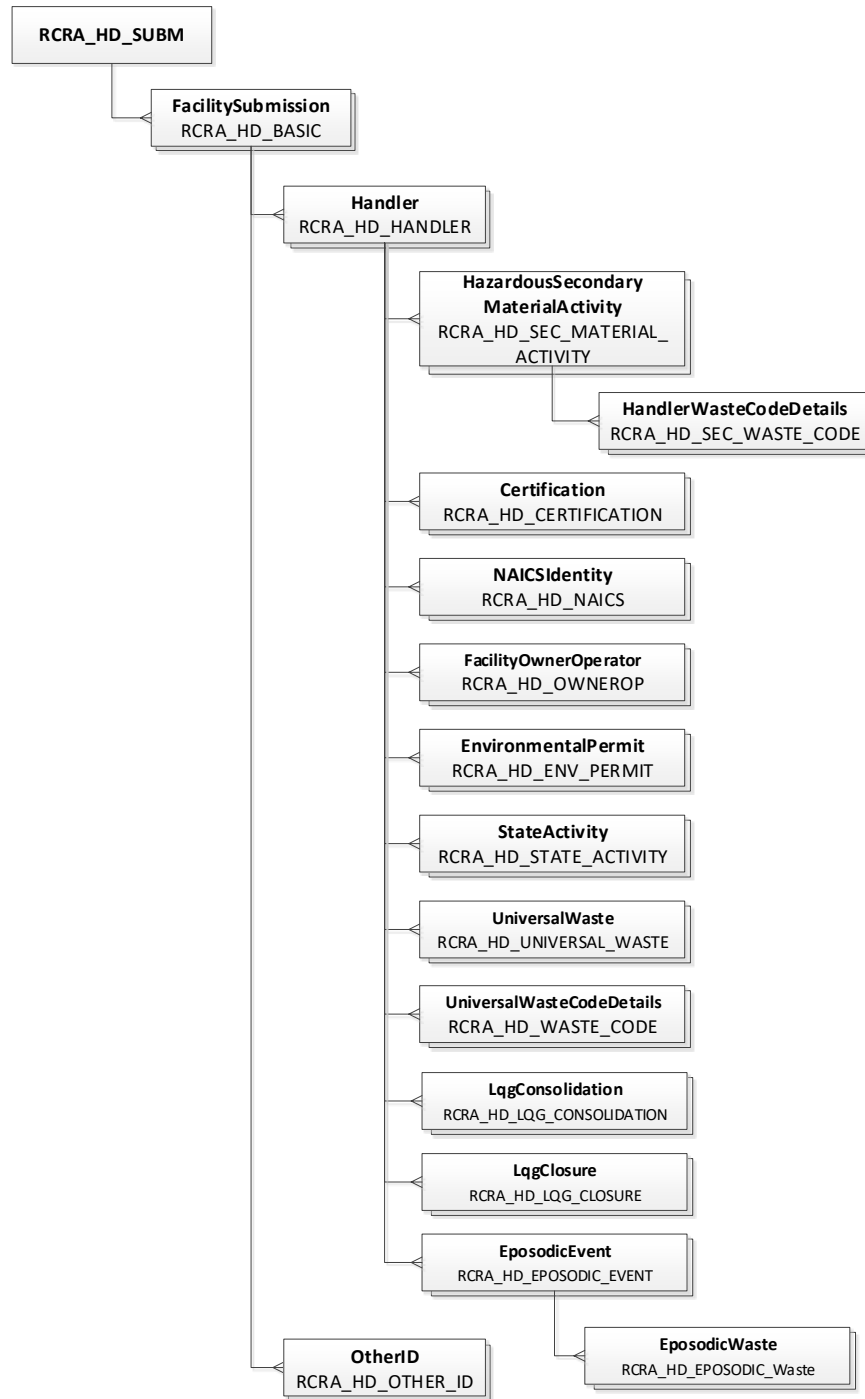
Compliance Monitoring and Enforcement (CME)

```
RCRA_CME_SUBM
    │
    └── CMEFacilitySubmission
        RCRA_CME_FAC_SUBM
            │
            ├── EnforcementAction
            │   RCRA_CME_ENFRC_ACT
            │       │
            │       ├── CSNYDate
            │       │   RCRA_CME_CSNY_DATE
            │       │
            │       ├── Penalty
            │       │   RCRA_CME_PNLTY
            │       │       │
            │       │       └── Payment
            │       │           RCRA_CME_PYMT
            │       │
            │       ├── Milestone
            │       │   RCRA_CME_MILESTONE
            │       │
            │       ├── ViolationEnforcment
            │       │   RCRA_CME_VIOL_ENFRC
            │       │
            │       ├── Supplemental
            │       │   EnvironmenalProject
            │       │   RCRA_CME_SUPP_ENVR_PRJT
            │       │
            │       └── Media
            │           RCRA_CME_MEDIA
            │
            ├── Evaluation
            │   RCRA_CME_EVAL
            │       │
            │       ├── EvaluationCommitment
            │       │   RCRA_CME_EVAL_COMMIT
            │       │
            │       └── EvaluationViolation
            │           RCRA_CME_EVAL_VIOL
            │
            └── Violation
                RCRA_CME_VIOL
                    │
                    └── Citation
                        RCRA_CME_CITATION
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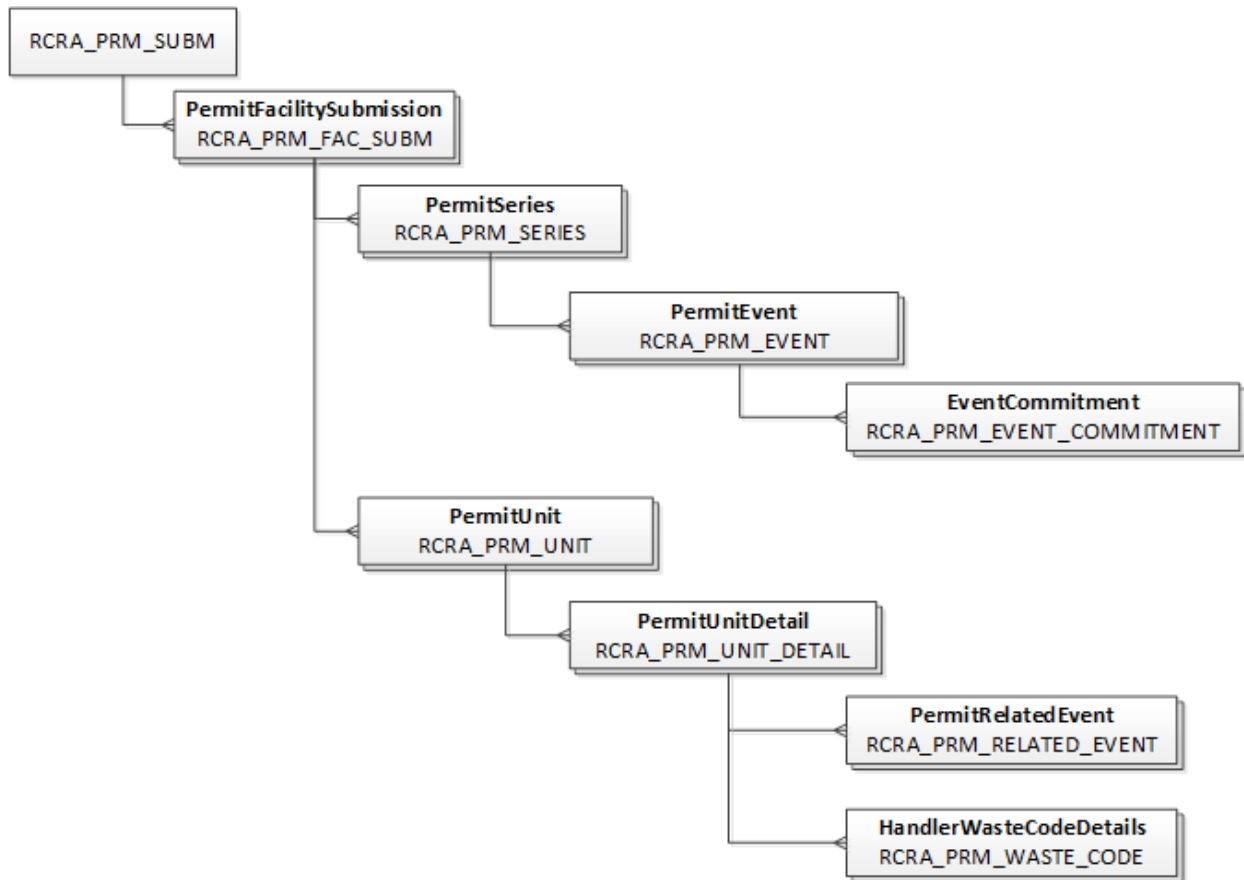
Financial Assurance (FA)

Geospatial Information (GIS)

Corrective Action (CA)
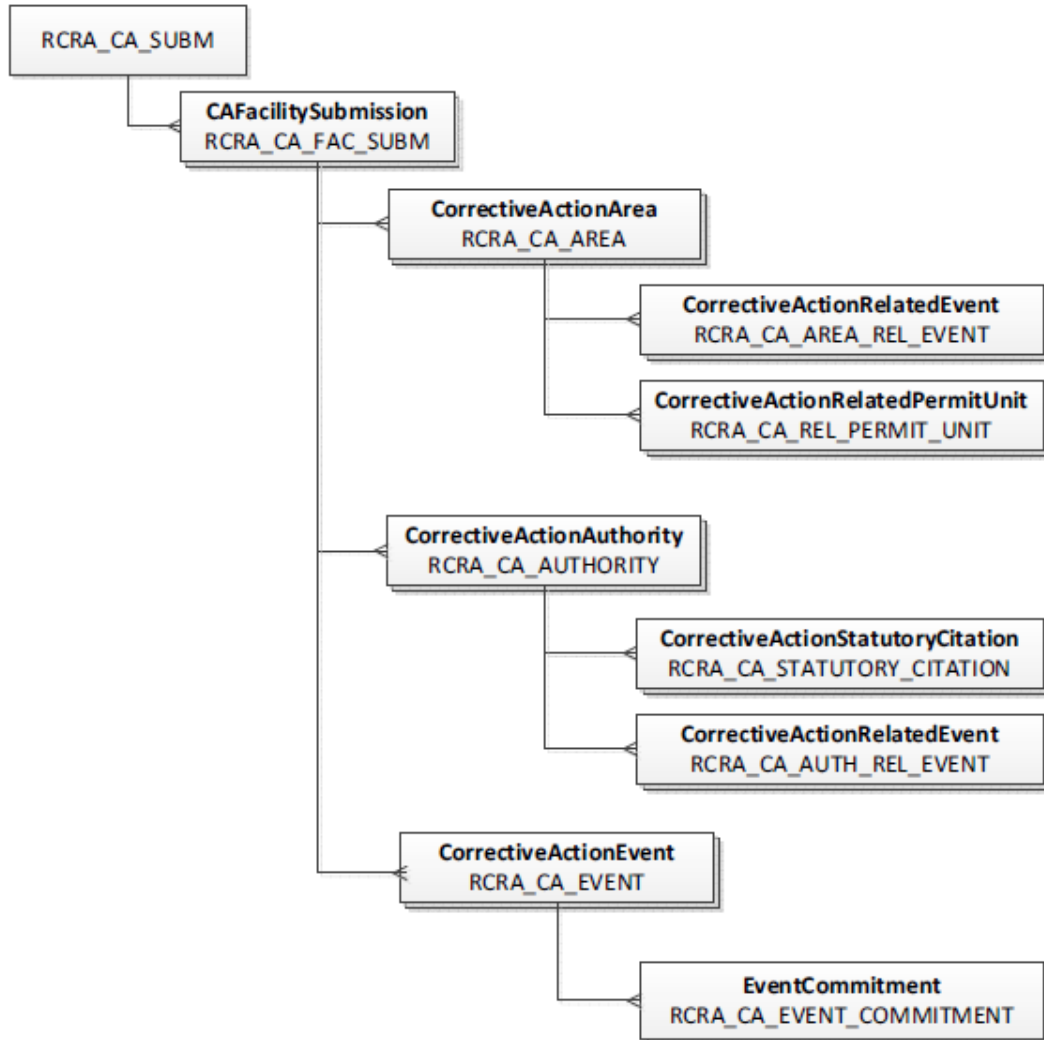
Permitting (PM)

Current Handler (CH) – Report Universe

HazardousWasteReportUnivSubmission

- RCRA_RU_REPORT_UNIV_SUBM

ReportUniv

- RCRA_RU_REPORT_UNIV

eManifest