**Middletown Power LLC**
P.O. Box 1001
1866 River Road
Middletown, CT 06457

February 8, **2017**

Ms. Jing Chen
Connecticut Department of Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106

**Subject: Semi-Annual Site Status Update**
**Middletown Station, 1866 River Road, Middletown, CT**

Dear Ms. Chen:

Middletown Power LLC respectfully submits the enclosed Semi-Annual Site Status Update report prepared by CB&I Environmental & Infrastructure, Inc. (CB&I) for the Middletown Station. The status update covers environmental activities performed from February 2016 through November 2016 at the subject site.

Please contact Keith Shortsleeve, Environmental Compliance Specialist at Middletown Power LLC with any questions or for additional information at (860) 638-3102 or via email at keith.shortsleeve@nrg.com.

Sincerely,
MIDDLETOWN POWER LLC

Don Guzzetta
Plant Manager

Cc: Keith Shortsleeve, Middletown Power LLC (hard copy and electronic copy)
Robert Spooner, NRG (electronic copy)
Juan Perez, USEPA (electronic copy)
Andrew Walker, LEP, CB&I (electronic copy)

CB&I Environmental & Infrastructure, Inc.
150 Royall Street
Canton, Massachusetts 02021
617-589-5111
Fax: 617-589-5495
WWW.CBI.com

February 8, 2017

Project #: 631207124.03021320

Ms. Jing Chen
Connecticut Department of Energy & Environmental Protection
79 Elm Street
Hartford, CT 06106

Subject: Semi-Annual Site Status Update
Middletown Generating Station
Middletown, CT

Dear Ms. Chen:

On behalf of Middletown Power LLC, CB&I Environmental & Infrastructure (CB&I) has prepared this letter to provide a semi-annual site status update for the subject site. In addition, CB&I is providing the Connecticut Department of Energy & Environmental Protection (CTDEEP) with a schedule for continuing environmental activities at the site.

**FEBRUARY 2016 THROUGH NOVEMBER 2016 ACTIVITIES**

Environmental field activities completed at the site between February 2016 and November 2016 include Engineered Control (EC) inspections. No groundwater monitoring was performed during this reporting period. The EC activities are discussed below. Other environmental activities completed for the subject site during this reporting period include the following:

- Capping and Environmental Land Use Restriction (ELUR) issues were discussed in a meeting with the CTDEEP in October 2015. The EC will be implemented in SB-2 including the southeast portion of SB-2 (which extends onto Connecticut Department of Transportation (ConnDOT) property) once a final agreement is reached between NRG, ConnDOT, and CTDEEP. The efforts that have been made are documented in the April 11, 2016 letter submitted to CTDEEP and provided in **Attachment 1**. We seek CTDEEP's assistance in working with ConnDOT to close out the site, via use of an ELUR or any other "out of the box" method that meets CTDEEP's goals, as well as NRG and ConnDOT's goals. A follow up meeting was held on September 8, 2016 to continue negotiations between NRG, ConnDOT, CTDEEP, and CB&I. Several potential remedial options were discussed, but there was no final resolution on the matter. NRG and ConnDOT both ended up with a task list of administrative items to be completed shortly to help move the process forward. A follow up meeting or conference call is anticipated to be held this winter.

- NRG submitted an Alternative and Additional Surface Water Protection Criteria (SWPC) and soil request to CTDEEP on February 2, 2016. Approval was received on February 19, 2016 from CTDEEP for EPH/VPH Methods (I/C DEC, GB PMC, SWPC, and I/C GWVC). Approval was also received for extractable total petroleum hydrocarbons (ETPH), 2-methylnaphthalene, and

phenanthrene SWPC values. A site walk was completed on August 30, 2016 with NRG, CTDEEP, and CB&I to review site conditions. NRG received a copy of the internal CTDEEP memorandum dated November 2016 which stated that the requested values for selenium and vanadium would be approved but that the value for arsenic would remain at the Remediation Standard Regulations (RSR) default value. Additionally, it was noted that data for well TW-14 will need to be compared to CT Water Quality Criteria (WQC) for aquatic life as groundwater in the area of the well may discharge to wetlands. NRG is still reviewing the memorandum and will provide comment shortly if needed.

**Construction of Site-Wide EC**

EC construction on SB-2 continues to be delayed in order to finalize the details of the access agreement with ConnDOT relative to RSR regulatory requirements. EC completion will be documented in a subsequent combined status report and EC Completion Report.

**EC Inspections**

As stated in Section 6.0 of the CTDEEP-approved EC, routine inspections of the EC installed to date begin one month after completion and are performed quarterly for the first year. After the first year, the inspection frequency can be reduced to a semi-annual schedule should the site condition be suitably stable. NRG and CB&I have conducted and completed the above noted required periodic inspections of SB-1 and several areas of stone and pavement cover. These areas are now subject to semi-annual routine inspections. Additional areas of the EC will be inspected as they are completed. As of October 2015, the areas of EB-2 and between EB-2 and SB-1 completed during the previous reporting period are subject to the quarterly 'first year' routine inspections. During this reporting period, NRG conducted routine EC inspections on March 9, 2016, June 19, 2016, and September 9, 2016. A modified version of Table 1 of the EC Part 2, the Engineered Control Inspection Checklist, was completed to document the inspections (**Attachment 3**).

**SITE SCHEDULE**

Outlined below is an estimated site schedule that Middletown Power LLC expects to follow in the next two years.

| Activity | Anticipated Date |
|---|---|
| Continued Groundwater Monitoring | Q2 & Q4 2017, 2018 TBD |
| RAP Complete (i.e., SB-2 cap construction complete) | Q4 2017 |
| RAP Completion Report (includes Engineered Control Completion Report) | Q1 2018 |

NRG will continue to provide updates on the status of response actions at the subject site on a semi-annual basis as requested by CTDEEP. Plans, submittals, and reports will be copied to the USEPA. If you have any questions regarding this letter or any other matter, please do not hesitate to call.

Sincerely,

Andrew D. Walker, LEP, LSP
Project Manager
CB&I Environmental & Infrastructure, Inc.

Phone: 617-589-6143
Email Address: Andrew.Walker@CBI.com

Enclosures:

Attachment 1 – Letter to CTDEEP (April 11, 2016)
Attachment 2 – Engineered Control Inspection Checklists

cc: Keith Shortsleeve, Middletown Power LLC (hard copy and electronic copy)
Robert Spooner, NRG (electronic copy)
Juan Perez, USEPA (electronic copy)

**ATTACHMENT 1**

MURTHA CULLINA

BRUCE L. MCDERMOTT
203.772.7787 DIRECT TELEPHONE
860.240.5723 DIRECT FACSIMILE
BMCDERMOTT@MURTHALAW.COM

April 11, 2016

Mr. Patrick Bowe
Director
Remediation Division
Bureau of Water Protection & Land Reuse
Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Re: NRG Energy, Middletown

Dear Mr. Bowe:

On behalf of NRG Energy and in response to your November 30, 2015 correspondence regarding the request for an alternative method of compliance with the Environmental Land Use Restriction ("ELUR") for an Approved Engineered Control Variance for the Middletown Facility, we write to document the efforts that have been made to record an ELUR on the DOT Parcel and to document why removing the waste from the DOT parcel is not a viable option. In addition, we seek your assistance in working with DOT to close out NRG's Middletown Transfer Act site, via use of an ELUR or any other "out of the box" method that meets DEEP's goals, as well as NRG and DOT's goals.

We understand from our meeting in October that the Commissioners of DEEP and DOT meet on a monthly basis and we would like to request that the agencies broach the topic of the ELUR during the next meeting. Finishing this site is as much a priority to NRG as it is to DEEP and any means by which DEEP can assist in reaching this goal would be appreciated.

ELUR

Historically, DOT had expressed a willingness to execute an ELUR for the strip of property. In May of 2013, we, on behalf of NRG, reached out to DOT to discuss access to the site, as well as how to coordinate the ELUR. An appraiser, who was an approved

appraiser for DOT, was retained to appraise the subject strip of land. The appraiser reported that the value of the strip was approximately $40,000, having been reduced by $110,000 due to the presence of historic contamination. As a result, DOT offered to execute the ELUR in exchange for $110,000. NRG disputed the figure on the grounds that contamination, rather the cap or the ELUR, caused the loss in value. Thus, the cap and ELUR would resolve contamination issues in accordance with state law and generally restore the value of the property. DOT disputed the method utilized by the appraiser and subsequently took a firm stance against any ELUR on the strip.

Despite DOT's initial willingness to execute an ELUR, since DOT determined that it would not execute an ELUR, it has highlighted two key concerns:

- *Setting a precedent for executing ELURs.*

  With significant stretches of property throughout the State of Connecticut, DOT has concerns over setting a precedent in executing this ELUR. The key concern is managing a multitude of ELURs within its property if other entities began approaching DOT to execute ELURs on other pieces of DOT's property. NRG responded to the concern by reaffirming its intention of assuming responsibility for actively monitoring within the quarter-acre strip of land.

- *Functional Value.*

  DOT has expressed concern over their ability to utilize the property as planned. During a 2013 meeting with DOT, it was noted that there was a relatively high chance that the portion of the railroad that abutted the subject strip would be will be reactivated within 2 years. DOT had concerns that if the railroad is reactivated, the ELUR would prevent ease of access for construction and maintenance in the area, as well as require extra precautions during construction and maintenance workers (i.e. OSHA training for workers).

  While the ELUR may necessitate obtaining a release from DEEP to complete the necessary construction and maintenance for the reason that restriction would abut the "toe of the slope" for the railway, the incremental cost of these burdens, to the extent that they are created as a result of the ELURs, would be borne by NRG. Moreover, a Temporary Conditional Release ("TCR") could be utilized to alleviate some of the burdens for any regularly conducted maintenance that may need to be done if the railroad is activated in that area.

Ultimately, NRG and DOT agreed to resolve the issues with a licensing agreement that would permit NRG access to the DOT strip to install, and perform necessary maintenance of, the engineered control. NRG, via the agreement, would agree to perform the maintenance, as well as absorb any incremental costs incurred by DOT in operating the railroad. DOT also agreed not to disturb the capped area without consulting with NRG, so that NRG may work with DEEP to ensure that the work is done in an approved manner. The intent of the licensing agreement was to satisfy DOT's concerns and avoid a precedent of issuing ELURs, however, mimic the language of the ELUR so that DEEP's goals in instituting ELURs were met.

NRG and DOT agreed to seek DEEP's assistance with crafting the final language of the agreement so that the agreement would adequately mimic an ELUR and allow NRG to verify its property, including the off-site issues. As you recall, upon meeting with DEEP on October 7, 2015, DEEP suggested adding itself as a party to the agreement to provide DEEP with a mechanism by which to enforce the agreement. Unfortunately, DEEP ultimately determined that this mechanism would not adequately address the issues at the site.

As a last effort, NRG approached DOT regarding purchasing the strip of land and providing an easement back to DOT for their continued use. This would provide NRG with the ability to put the easement on the property themselves and allow DOT to continue use of the land without having to manage the ELUR aspect. Unfortunately, DOT is not interested in this concept.

Soil Removal Option

As discussed during the October 7, 2015 meeting at DEEP, removal of the impacted soil for offsite disposal or consolidation back into the former settling basin is not a viable option in this scenario. In order to accomplish this task, approximately 800 linear feet by at least 15 feet deep would need to be removed as shown on Figure 2. The specific removal area is shown as the highlighted orange trapezoid area with property line in the middle. This is approximately 20,000 cubic yards of soil. Once a work design package was completed and approved, a contractor would need to excavate the material, partially dewater the excavation, stockpile the soil in SB-2, backfill the excavation with clean soil, compact, and regrade. The cap at SB-2 would need to be redesigned to accommodate the 20,000 cubic yards of soil generated from the removal activities. Then the cap would be constructed in a similar fashion to the currently approved design. This would add an *additional* $1.5 million to the existing costs for the cap project. The complexities of working adjacent to the railroad track and working in a former ash basin make this work risky and expensive. A basic cost benefit analysis shows that that the work is not worth the small incremental benefit compared to constructing the cap now (with no removal activities) as currently designed.

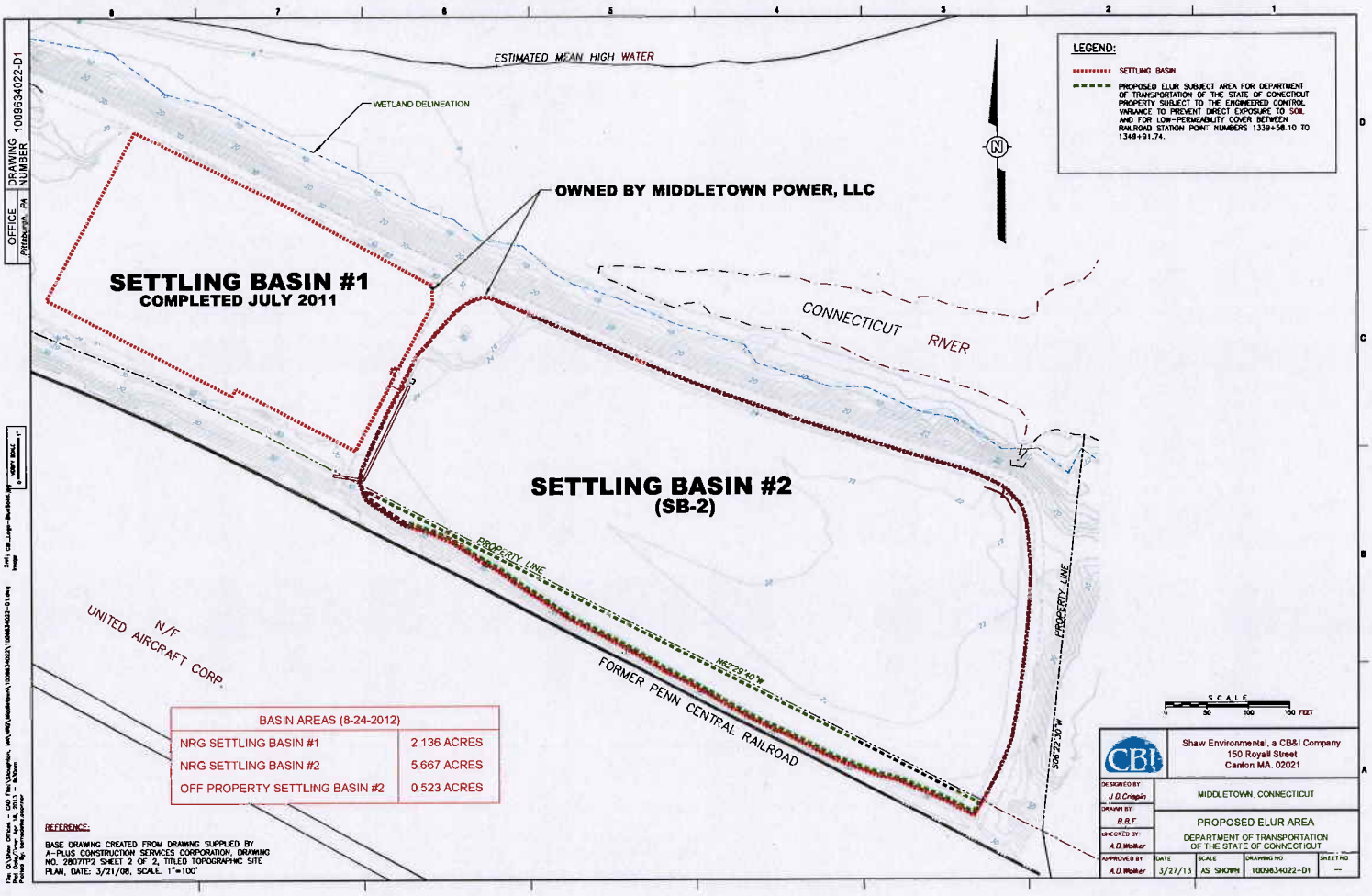
Again, we seek your assistance in working with DOT to develop a plan to close out NRG's Transfer Act obligations at the Middletown site. If you have any questions about any of the submitted information, please do not hesitate to call. Thank you for your help.

Very truly yours,

Bruce L. McDermott

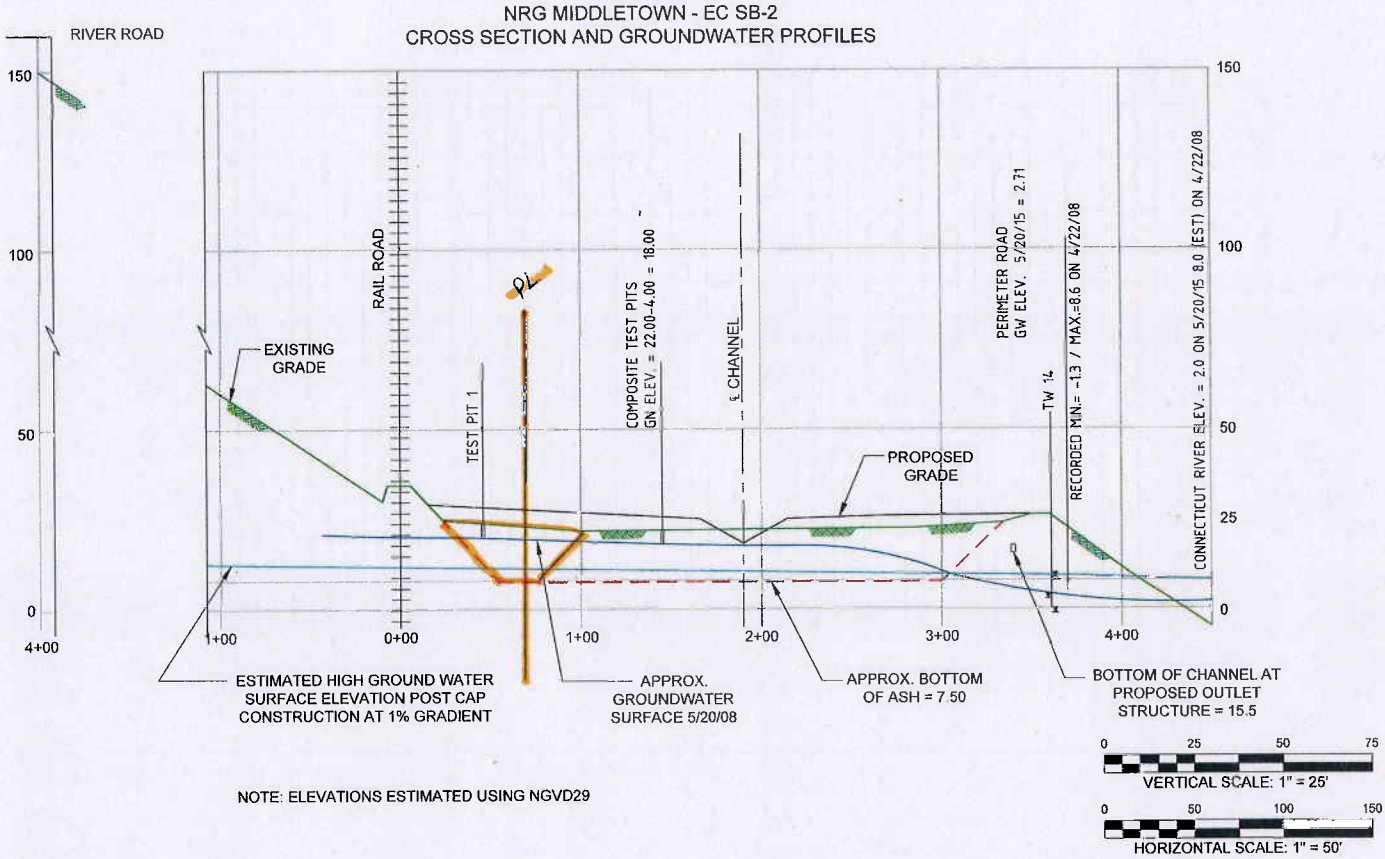
Drawings
1. Proposed ELUR area
2. Figure 2

cc: David Ringquist, DEEP
Peter Hill, DEEP
Michelle Bedson, DEEP
Juan Perez, EPA
Julie Thomas, CDOT
Tracy Stanton, NRG
Robert Spooner, NRG
Andrew D. Walker
Alfred E. Smith




| BASIN AREAS (8-24-2012) | |
|---|---|
| NRG SETTLING BASIN #1 | 2.136 ACRES |
| NRG SETTLING BASIN #2 | 5.667 ACRES |
| OFF PROPERTY SETTLING BASIN #2 | 0.523 ACRES |

FIGURE 2
NRG MIDDLETOWN - EC SB-2
CROSS SECTION AND GROUNDWATER PROFILES




NOTE: ELEVATIONS ESTIMATED USING NGVD29

**ATTACHMENT 2**

# Engineered Control Inspection Checklist
# Middletown Generating Station
# Middletown, CT

Completed by: Keith Shortsleeve
Company: NRG
Date: 03-9-2016
Signature:

**Problem Code**

**ACE 1 or 2 =** Aggregate Cover Erosion, Moderate or Severe
**ACSW 1 or 2 =** Aggregate Cover Subsurface Washout, Moderate or Severe
**SCE 1 or 2** = Soil Cover Erosion, Moderate or Severe
**SCSW 1 or 2 =** Soil Cover Subsurface Washout, Moderate or Severe
**GD 1 or 2 =** Vegetation Dead, Moderate or Severe
**GE** 1 or 2 = Vegetation Erosion, Moderate or Severe
**GP** = Vegetation Water Ponding Observed
**GSF** = Vegetation Slope Failure
**GSW** = Vegetation Subsurface Washout
**PDSO** = Perimeter Drainage Swale Obstructed
**DCO** = Drainage Culvert Obstructed
**AP C1** = Asphalt Pavement Cracks > 1/2 inch
**AP C2 =** Asphalt "Potholes"
**SF** = Slope Failure
**O =** Other

| Remedial Areas (1) | Problem Code | Repair Requirements and Notes (Provide Description) |
|---|---|---|
| **AOC 1 (Ash Settling Basins)** | | |
| Low Permeability Engineered Control | | Construction partially complete. |
| Asphalt Engineered Control | | Complete |
| | | |
| | | |
| Aggregate Engineered Control | GSF, GP | Erosion of the dike wall at the west gate on the north side of SB-1 was repaired due to stormwater overflowing from the trenches near the former equalization basin EB-2. |
| | | |
| Soil Engineered Control | | Construction completed in September 2015. |
| | | |
| | | |
| | | |
| | | |
| **AOC 8 (North & South Fuel Additive Tanks)** | | |
| Asphalt Engineered Control | | Construction complete. |
| | | |
| | | |
| | | |
| **AOC 13 (Misc. Residual Coal Ash Area Eastern half)** | | |
| Aggregate Engineered Control | | Construction Complete. |
| | | |
| Soil Engineered Control | | Construction Complete. |
| | | |
| Asphalt Engineered Control | | Construction Complete. |
| | | |
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Notes:
(1) Use Sheets 1, 2, 3 and 4 of the Engineered Control Drawings for the Inspection Plan.
(2) Document condition of each area identified and repaired during previous inspection.

# Engineered Control Inspection Checklist
# Middletown Generating Station
# Middletown, CT

Completed by: Keith Shortsleeve
Company: NRG
Date: 06-19-2016
Signature:

**Problem Code**

**ACE 1 or 2 =** Aggregate Cover Erosion, Moderate or Severe
**ACSW 1 or 2 =** Aggregate Cover Subsurface Washout, Moderate or Severe
**SCE 1 or 2** = Soil Cover Erosion, Moderate or Severe
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| Remedial Areas (1) | Problem Code | Repair Requirements and Notes (Provide Description) |
|---|---|---|
| **AOC 1 (Ash Settling Basins)** | | |
| Low Permeability Engineered Control | | Construction partially complete and mowing of SB-1, Former EB-1 underway. |
| Asphalt Engineered Control | | Complete |
| | | |
| | | |
| Aggregate Engineered Control | | |
| | | |
| Soil Engineered Control | | Construction completed in September 2015. Mowing is underway. |
| | | |
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| | | |
| **AOC 8 (North & South Fuel Additive Tanks)** | | |
| Asphalt Engineered Control | | Construction complete. |
| | | |
| | | |
| | | |
| **AOC 13 (Misc. Residual Coal Ash Area Eastern half)** | | |
| Aggregate Engineered Control | | Construction Complete. |
| | | |
| Soil Engineered Control | | Construction Complete. |
| | | |
| Asphalt Engineered Control | | Construction Complete. |
| | | |
| | | |
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Notes:
(1) Use Sheets 1, 2, 3 and 4 of the Engineered Control Drawings for the Inspection Plan.
(2) Document condition of each area identified and repaired during previous inspection.

# Engineered Control Inspection Checklist
# Middletown Generating Station
# Middletown, CT

Completed by: Keith Shortsleeve
Company: NRG
Date: 09-9-2016
Signature:

**Problem Code**

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| Asphalt Engineered Control | | Construction Complete. |
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Notes:
(1) Use Sheets 1, 2, 3 and 4 of the Engineered Control Drawings for the Inspection Plan.
(2) Document condition of each area identified and repaired during previous inspection.