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July 20, 2016

North Carolina Department of Environmental Quality
Division of Waste Management
Solid Waste Section
1646 Mail Service Center
Raleigh, North Carolina 27699-1649

Attn: Ms. Elizabeth Werner

Re: Proposal to Replace MW-5 and MW-7
Permit No.: 6004-INDUS (Landfill No. 2)
McGuire Nuclear Station
Mecklenburg County
Huntersville, North Carolina 28078

Dear Ms. Werner,

Please find the McGuire Landfill No. 2 (Permit No. 6004) proposal by S&ME to replace monitoring wells MW-5 and MW-7 enclosed in this submittal. Both monitoring wells have been sampled infrequently due to a low volume of water. This proposal includes basic project information, scope of work to be completed, location of new borings, abandonment details, estimated schedule, and a figure with well locations.

Should you have any questions regarding the content attached, please contact me at (980) 373-5697.

Sincerely,

A handwritten signature in blue ink that reads 'B. Tyler Hardin'.

Tyler Hardin, EI
Environmental Services

Attachments: Groundwater Sampling Report, Duke Energy's McGuire Nuclear Station No. 1 Landfill

Cc (via e-mail): Sean DeNeale, Duke Energy
John Williamson, Duke Energy



June 21, 2016

Duke Energy Carolinas, LLC
526 South Church Street, Mail Code: EC13K
Charlotte, North Carolina 28202

Attention: Ms. Tyler Hardin
tyler.hardin@duke-energy.com

Reference: **Proposal for Monitoring Well Replacement
Duke Energy's McGuire Nuclear Station No. 2 Landfill**
12700 Hagers Ferry Road
Huntersville, North Carolina
S&ME Proposal No. 42-1600604

Dear Ms. Hardin:

Per your May 9, 2016 email request, S&ME, Inc. (S&ME) appreciates the opportunity to provide this proposal to replace two groundwater monitoring wells at the referenced Duke facility. This proposal provides our understanding of the project and outlines our proposed scope of services, schedule, and costs.

❖ Project Information

Duke Energy conducts routine groundwater monitoring in proximity to the operating No. 2 Landfill at the McGuire Nuclear Station. Recent sampling events have indicated a low volume of water in monitoring wells MW-5 and MW-7 to the point that the wells are infrequently sampled.

We discussed these two wells with Duke Energy's Lead Environmental Specialist and agreed that the replacement wells needed to be deeper and constructed with 15-feet of screen.

❖ Scope of Services

Our proposed scope of services includes the following:

- ◆ Prepare a site specific health and safety plan for the monitoring well abandonment and replacement activities.
- ◆ Provide notification to Mecklenburg County for the abandonment and replacement of the two monitoring wells.
- ◆ Attend a pre-job meeting with Station personnel prior to commencing on-site work.



- ◆ Mobilize drilling equipment to the landfill area to abandon and re-install monitoring wells MW-5 and MW-7 at the No. 2 Landfill. The approximate locations of the wells to be replaced are shown on the attached **Figure 1**. Please note that other wells in proximity to the No. 2 Landfill are not shown.
- ◆ Construct a decontamination pit in the No. 2 landfill area to rinse the down hole drilling equipment between borings and capture the rinse water.
- ◆ Containerize the rinse water into 55-gallon drums and transport to the maintenance garage area.
- ◆ The existing wells will be abandoned by filling the monitoring well pipe (screen and casing) with a mixture of powdered bentonite and Portland cement. The mixture will be pumped via tremie pipe placed near the bottom of the well pipe and pumped until the mixture reaches the ground surface. Surface completions (protective casings, well pads, etc.) will be removed and transported to the garage for disposal as solid waste.
- ◆ The borings for the new wells will be off-set within 10 feet from the abandoned well locations and drilled 10 feet deeper than the prior well depths. The current monitoring wells depths are about 65 and 38 feet for MW-5 and MW-7, respectively. Soil cuttings from the replacement wells will be spread on the ground in the apparent down gradient direction. Each replacement well will be constructed with 15 feet of well screen.
- ◆ The abandonment and re-installation of the monitoring wells will be conducted by a North Carolina certified well driller and in general accordance with the North Carolina Well Construction Standards, North Carolina Administrative Code Title 15A Subchapter 2C Section .0100.
- ◆ The monitoring wells will be developed by over pumping with a submersible pump until the discharged water is relative free of suspended soil particles. The development water will also be containerized and transported to the garage area for disposal.
- ◆ We will coordinate disposal of the drums of rinse water and development water. We have assumed that prior analytical data will be representative of both and can be used to profile the water off-site. We have also assumed Duke Energy will provide laboratory data from previous sampling events to assist in profiling the drums off-site.
- ◆ Collect horizontal coordinates of the replacement wells with hand held GPS receiver.
- ◆ Attend a post-job briefing as directed by Station personnel at the completion of the field work.
- ◆ Prepare a letter report of the monitoring well abandonment and replacement including boring logs for each activity.



❖ **Schedule**

We estimate four days will be needed to abandon, re-install, and develop the monitoring wells. Disposal of the development and purge water may take up to three weeks from our receipt of prior analytical data. We will submit our letter report approximate one week after we receive the disposal manifest from the disposal vendor.

❖ **Authorization**

S&ME will perform these services under a Purchase Order and Duke Energy's Standard Terms and Conditions for on-site Construction Services with previously negotiated modifications.

❖ **Closing Remarks**

S&ME appreciates the opportunity to submit this proposal and provide you with our environmental services. Should you have any questions, please feel free to contact us at 864.574.2360.

Sincerely,

S&ME, Inc.

John Whitehead, P.G.

Senior Geologist

jwhitehead@smeinc.com

Enclosures: Figure 1 – Monitoring Well Replacement Locations

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SCALE:	As Shown
PROJECT NO.	42-1600604

DATE:	May 19, 2016
DRAWN BY:	jww
CHECKED BY:	



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 Spartanburg, South Carolina 29301
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Monitoring Well Replacement Locations
 McGuire Nuclear Station No. 2 Landfill
 Hagers Ferry Road
 Huntersville, North Carolina

FIGURE NO.
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