



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
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CHICAGO, IL 60604-3590

APR 10 2014

REPLY TO THE ATTENTION OF:

E-19J

Cindy Bladey  
Rules, Announcements, and Directives Branch  
Office of Administration  
Mail Stop 3WFN-06-44M  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**Re: Draft Plant-Specific Supplement 52 to the Generic Environmental Impact Statement for the License Renewal of Davis-Besse Nuclear Power Station, Unit 1, Oak Harbor, Ottawa County, Ohio. NUREG-1437. CEQ #20140050.**

Dear Ms. Bladey:

The U.S. Environmental Protection Agency has reviewed the Draft Supplemental Environmental Impact Statement (SEIS) for the above-mentioned project prepared by the Nuclear Regulatory Commission (NRC). Our comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act.

The Davis-Besse Nuclear Power Station, Unit 1 (Davis-Besse) is located in Oak Harbor, Ottawa County, Ohio approximately 25 miles east of Toledo, Ohio. The 954-acre site is on the shore of Lake Erie, adjacent to the Toussaint River. Approximately 700 acres of the site are leased to the U.S. Fish and Wildlife Service under the Ottawa National Wildlife Refuge. Davis-Besse is a single-unit pressurized water reactor that uses closed-cycle cooling via one cooling tower. The facility is licensed for an electrical output of 913 megawatt-electric (MWe). Spent fuel is stored in a pool inside the plant until it is cooled and transferred to an onsite independent spent fuel storage installation, where it will remain until a permanent repository is developed.

Davis-Besse is owned and operated by FirstEnergy Nuclear Operating Company (the applicant). The applicant applied to NRC for an extension to its operating license, extending operation for an additional 20-year period. Based on information provided by the applicant, NRC's preferred alternative is to grant the 20-year extension.

The NRC developed a Generic Environmental Impact Statement (EIS) to streamline the license renewal process based on the premise that environmental impacts of most nuclear power plant license renewals are similar. NRC develops facility-specific supplemental EIS documents as the

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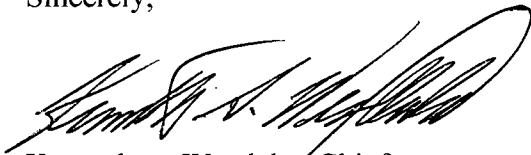
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facilities apply for license renewal.

Based on our review of the Draft SEIS, we have rated the document and project as **EC-2, Environmental Concerns-Insufficient Information**. This rating is based, in part, on impacts due to refurbishment and continued operation of the facility, particularly to terrestrial and aquatic resources. EPA has also identified missing or incomplete information. We have enclosed our ratings definitions and our detailed comments.

Thank you for the opportunity to comment on this document. If you have any questions or wish to discuss any aspect of this document, please contact Elizabeth Poole of my staff at 312-353-2087 or [poole.elizabeth@epa.gov](mailto:poole.elizabeth@epa.gov).

Sincerely,



Kenneth A. Westlake, Chief  
NEPA Implementation Section  
Office of Enforcement and Compliance Assurance

Cc: Elaine Keegan, U.S. Nuclear Regulatory Commission

Enclosure: Detailed Comments  
Summary of Ratings Definitions

**U.S. EPA's Detailed Comments on Davis-Besse  
Draft SEIS, NUREG-1437, CEQ #20140050  
April 2014**

**Impact Categories**

The Draft SEIS identifies several resource areas with impact categories ranges as “SMALL to MODERATE,” or “MODERATE to LARGE<sup>1</sup>,” including offsite impacts to terrestrial resources from refurbishment and impacts to historic archaeological resources from operation. There is little indication how the impacts to those resources could potentially increase from SMALL to MODERATE or from MODERATE to LARGE. For example, certain categories of impacts have clear and objective metrics that determine whether the site-specific impact is SMALL, MODERATE, or LARGE, such as *Groundwater Use and Quality*, page B-4.

**Recommendation:** EPA recommends the Final SEIS clarify how impacts to resources that are defined in a range could move from lesser significance to higher significance. For example, the metric for becoming a MODERATE impact to offsite terrestrial resources from refurbishment could be direct take of a certain number of acres or type of habitat. Further, NRC and the applicant should identify mitigation measures, including coordination with the Ohio Department of Natural Resources (ODNR) and the U.S. Fish and Wildlife Service (USFWS), to ensure that impacts are avoided or minimized and remain in the SMALL category. Mitigation measures should be specific; the Draft SEIS currently states “use of best management practices,” but this is too general. The Final SEIS should identify which specific best management practices will be used, where appropriate. For impacts to resources that are described in a range of significance, an adaptive management approach to mitigation should be outlined in the Final SEIS and committed to in the license.

**Terrestrial Resources – Refurbishment and Operation**

Section 3.2.1, *Terrestrial Resources – Refurbishment Impacts*, details several refurbishment activities, including two permanent storage facilities, one permanent multi-story office building, and several temporary facilities. The temporary facilities may include a permanent base concrete pad. The Draft SEIS states that all land disturbed for construction and refurbishment-related activities will be previously disturbed land, such as mowed areas, parking lots, or other paved surfaces. These activities will lead to an increase in impervious surfaces. As discussed in section 4.15.3, *Cumulative Impacts on Aquatic Resources*, urbanization and shoreline development are

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<sup>1</sup> NRC has developed three levels of significance for potential impact: SMALL, MODERATE, and LARGE. See page 1-4 of the Draft SEIS for further explanation.

major stressors on the health of Lake Erie. Avoiding impacts to wetlands and reducing the amount of impervious surfaces along the lake help reduce this stress.

**Recommendations:** EPA has several recommendations regarding the construction of the permanent and temporary facilities on the Davis-Besse site.

- EPA encourages the applicant to site and organize construction projects to minimize impacts to surrounding habitats. It is unclear if the permanent base concrete pad for temporary facilities is even necessary, since it is only under consideration at this time. Any unnecessary permanent, impervious areas are discouraged.
- EPA recommends staggering construction schedules of the new facilities so that no additional habitat is directly disturbed. This could mean having one temporary laydown area that services the construction of new permanent facilities one at a time, reducing the amount of disturbed habitat.
- Any new buildings and surrounding areas should be designed to Leadership in Energy and Environmental Design (LEED) standards. If LEED standards are pursued, this information should be included in the Final SEIS. Any potential use of Energy Star appliances, EPA's WaterSense program, EPA's GreenScapes program, or other similar programs should be identified in the Final SEIS. These are important elements of reducing the overall environmental impact of the proposed project.

Based on the discussion above pertaining to the development of new permanent and temporary facilities on the Davis-Besse site, EPA understands that some parking lots will be used for new permanent or temporary facilities. The Draft SEIS does not state whether the parking lots will be permanently lost due to construction and, if so, where new parking will be located. If the parking lots are currently in use and slated for conversion to permanent or temporary facilities, new parking facilities would need to be constructed to compensate for lost parking.

**Recommendation:** The Final SEIS should identify which parking lots are slated for permanent conversion to permanent or temporary facilities and whether parking spaces will need to be compensated for in another area of the Davis-Besse site. Any resultant impacts should be disclosed and mitigated. If new parking facilities are required because of the new permanent and temporary refurbishment facilities, EPA recommends permeable pavement be used, reducing runoff and helping to improve the health of Lake Erie.

### **Air Quality – Refurbishment**

The Draft SEIS does not identify any air quality impacts as a result of the proposed refurbishment projects. While EPA recognizes that Ottawa County is an attainment area for all criteria pollutants, we expect construction equipment used during refurbishment activities to emit

diesel emissions. The National Institute for Occupational Safety and Health (NIOSH) has determined that diesel exhaust is a potential occupational carcinogen, based on a combination of chemical, genotoxicity, and carcinogenicity data. In addition, acute exposures to diesel exhaust have been linked to health problems such as eye and nose irritation, headaches, nausea, asthma, and other respiratory system issues.

**Recommendations:** Although every construction site is unique, common actions can reduce exposure to diesel exhaust. EPA recommends that the applicant and NRC commit to the following actions during construction in the Final SEIS and license:

- Using low-sulfur diesel fuel (15 parts per million sulfur maximum) in construction vehicles and equipment.
- Retrofitting engines with an exhaust filtration device to capture diesel particulate matter before it enters the construction site.
- Positioning the exhaust pipe so that diesel fumes are directed away from the operator and nearby workers, thereby reducing the fume concentration to which personnel are exposed.
- Using catalytic converters to reduce carbon monoxide, aldehydes, and hydrocarbons in diesel fumes. These devices must be used with low sulfur fuels.
- Ventilating wherever diesel equipment operates indoors. Roof vents, open doors and windows, roof fans, or other mechanical systems help move fresh air through work areas. As buildings under construction are gradually enclosed, remember that fumes from diesel equipment operating indoors can build up to dangerous levels without adequate ventilation.
- Attaching a hose to the tailpipe of diesel vehicles running indoors and exhaust the fumes outside, where they cannot re-enter the workplace. Inspect hoses regularly for defects and damage.
- Using enclosed, climate-controlled cabs pressurized and equipped with high efficiency particulate air (HEPA) filters to reduce the operators' exposure to diesel fumes. Pressurization ensures that air moves from inside to outside. HEPA filters ensure that any incoming air is filtered first.
- Regularly maintaining diesel engines, which is essential to keep exhaust emissions low. Follow the manufacturer's recommended maintenance schedule and procedures. Smoke color can signal the need for maintenance. For example, blue/black smoke indicates that an engine requires servicing or tuning.
- Reducing exposure through work practices and training, such as turning off engines when vehicles are stopped for more than a few minutes, training diesel-equipment operators to perform routine inspection, and maintaining filtration devices.
- Purchasing new vehicles that are equipped with the most advanced emission control systems available.

- Using electric starting aids such as block heaters with older vehicles to warm the engine reduces diesel emissions.
- Using respirators, which are only an interim measure to control exposure to diesel emissions. In most cases, an N95 respirator is adequate. Workers must be trained and fit-tested before they wear respirators. Depending on work being conducted, and if oil is present, concentrations of particulates present will determine the efficiency and type of mask and respirator. Personnel familiar with the selection, care, and use of respirators must perform the fit testing. Respirators must bear a NIOSH approval number. Never use paper masks or surgical masks without NIOSH approval numbers.

### **Aquatic Resources – Refurbishment and Operation**

The Draft SEIS references two “areas of concern” near Buffalo and the Ashtabula River on page 2-34, lines 12-16 and the lakewide management plan (LaMP) for Lake Erie. The Draft SEIS does not, however, state that Davis-Besse is within the EPA-designated Maumee River Area of Concern (AOC), which was extended in 1992 to include the Toussaint River. The document references the Remedial Action Plan (RAP), but it does not clarify that it is specific to the Maumee River AOC.

**Recommendations:** The Final SEIS should update this section to reflect that areas of concern are EPA-designated Areas of Concern, with specific locations, degradations, and improvement goals. In this context, where “areas of concern” are described, the correct term AOC should be used. The “Buffalo area of concern” should be updated to refer to the Buffalo River AOC. Further, the document should reflect that Davis-Besse is within the Maumee River AOC and that the RAP has been developed to improve water quality of the Maumee River and Lake Erie.

The Davis-Besse site is largely wetland, per the description on page 2-1, but the Draft SEIS does not include a map of the types of wetlands found onsite. EPA is particularly interested in wetlands that are not actively managed under the Ottawa National Wildlife Refuge, but rather those that could be impacted or adjacent to refurbishment and other activities related to the operation of Davis-Besse. The Draft SEIS is unclear whether a wetland delineation was completed and whether wetlands are adjacent to areas proposed for construction.

**Recommendation(s):** EPA recommends including a wetland map and a proposed refurbishment facilities map in the Final SEIS. We acknowledge that the new facilities are proposed for previously-disturbed land, but without a map of both the aquatic resources and the proposed facilities, it is difficult to review potential direct and indirect impacts. EPA reminds NRC and the applicant to avoid even temporary, direct impacts to wetlands, such as staging construction equipment in wetlands. We recommend the Final SEIS include how the applicant and NRC will ensure direct and indirect impacts to

wetlands are avoided. Temporary impacts to jurisdictional wetlands would trigger the need for a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers.

### **Radiation Impacts to Aquatic and Terrestrial Resources**

Section 4.6.1, *Exposure of Aquatic Organisms to Radionuclides*, and section 4.7.2, *Exposure of Terrestrial Organisms to Radionuclides*, provide information about the new Category 1 issues<sup>2</sup> added in 2013 to the relicensing review process. Because this is a new issue, EPA finds the discussion lacking. There is no specific reference to guidance nor specific metrics that govern how the significance category was assigned.

**Recommendation:** EPA recommends the discussion be enhanced, given its recent inclusion in the review process, despite it being a Category 1 issues. Any available guidance should be identified. The objective metrics that define the significance category should be included.

### **Human Health**

Per section 4.9.3, *Electromagnetic Fields – Chronic Effects*, because chronic exposure to electromagnetic fields continues to be studied and are not known at this time, NRC does not categorize chronic effects from electromagnetic fields to be either Category 1 or 2 (generic or site-specific), but rather “UNCERTAIN.” EPA believes it would be prudent to consider the chronic effects of exposure to electromagnetic fields to be a Category 2 issue (site-specific), until a generic determination can be made.

**Recommendation:** EPA recommends NRC consider exposure to electromagnetic fields to be a Category 2 issues (site-specific) until a scientific consensus can be made and impacts can be analyzed as a Category 1 (generic).

### **Cumulative Impacts**

Based on the discussion provided in section 4.15.5.1, *Human Health - Radiological*, EPA commends the applicant and NRC for maintaining an operational radiation dose level that is within public dose standards and are as low as reasonably achievable (ALARA). However, because of the new facility at Fermi in Michigan scheduled to come online as early as 2021 and other nuclear reactors along Lake Erie, EPA recommends the public dose levels be closely monitored to ensure values do not increase past historical levels.

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<sup>2</sup> NRC separates generic issues, related to all facility, from site-specific issues. Category 1 issues (generic) have been analyzed in the Generic EIS and require no further discussion in a site-specific document, unless new and significant information is presented. Category 2 issues (site-specific) require analysis on a facility-by-facility basis.

**Recommendation:** EPA recommends that, with the addition of the new facility at Fermi in Michigan and other operating nuclear reactors adjacent to Lake Erie, public radiation doses are monitored closely to ensure no exceedances are recorded. Any exceedances should be reported to EPA.

### **Editorial**

Section 2.1.2.2, *Radioactive Gaseous Waste*, page 2-9, line 3, references 40 CFR Part 40, which is Research and Demonstration Grants. Please clarify if this is the intended citation.

**Recommendation:** Clarify whether this is correct; if not, please reflect the correct citation in the Final SEIS.

EPA recommends that resources agencies be provided with and the public have access to color versions of maps within the Draft SEIS, particularly for maps that rely on a color gradient. All maps in the paper copy and the CD of the Draft SEIS are provided in grey-scale, making it difficult to fully analyze certain impacts. For example, figures 2.1-2, 2.1-3, and 2.2-1 should be provided in color, or at minimum the document should include specific location in NRC's Agencywide Documents Access and Management System (ADAMS). This means the citation should not just be given as an ADAMS access number, but should also include a specific page number.

**Recommendation:** NRC should provide access to color versions of maps that rely on color gradient. If nothing else, the ADAMS access number and specific page location should be provided indicating where the color versions can be found.



## **\*SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\***

### **Environmental Impact of the Action**

#### LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

#### EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

### **Adequacy of the Impact Statement**

#### Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

<sup>\*</sup>From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment