PMFermiCOLPEm Resource

From: Berrios, Ilka
Sent: Thursday, January 28, 2010 8:35 AM
To: FermiCOL Resource
Subject: FW: RAI Letter 20
Attachments: NRC3-10-0008.pdf

From: LaShawn G Green [mailto:greenl@dteenergy.com]
Sent: Thursday, January 28, 2010 8:32 AM
To: Patel, Chandu; Hale, Jerry; Berrios, Ilka
Subject: RAI Letter 20

Hello Everyone,

Here is an electronic courtesy copy of RAI Letter 20.

Thank you,

LaShawn Green
DTE Energy
Nuclear Development-Licensing
313-235-8459
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(See attached file: NRC3-10-0008.pdf)

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The Detroit Edison Company
One Energy Plaza, Detroit, MI 48226-1279

10 CFR 52.79

January 27, 2010
NRC3-10-0008

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

References: 1) Fermi 3
Docket No. 52-033
2) Letter from Ilka T. Berrios (USNRC) to Jack M. Davis (Detroit Edison), "Request for Additional Information Letter No. 20 Related to the SRP Section 3.5.1.5 and 3.5.1.6 for the Fermi 3 Combined License Application," dated December 14, 2009

Subject: Detroit Edison Company Response to NRC Request for Additional Information Letter No. 20

In Reference 2, the NRC requested additional information to support the review of certain portions of the Fermi 3 Combined License Application (COLA). The responses to these Requests for Additional Information (RAIs) are provided as Attachments 1 and 2 of this letter. Information contained in these responses will be incorporated into a future COLA submission as described in the RAI response.

If you have any questions, or need additional information, please contact me at (313) 235-3341.

I state under penalty of perjury that the foregoing is true and correct. Executed on the 27th day of January 2010.

Sincerely,

Peter W. Smith, Director
Nuclear Development – Licensing & Engineering
Detroit Edison Company

Attachments: 1) Response to RAI Letter No. 19 (RAI 03.05.01.05-1)
2) Response to RAI Letter No. 19 (RAI 03.05.01.06-1)

cc: Chandu Patel, NRC Fermi 3 Project Manager
Jerry Hale, NRC Fermi 3 Project Manager
Ilka Berrois, NRC Fermi 3 Project Manager
Bruce Olson, NRC Fermi 3 Environmental Project Manager (w/o attachments)
Fermi 2 Resident Inspector (w/o attachments)
NRC Region III Regional Administrator (w/o attachments)
NRC Region II Regional Administrator (w/o attachments)
Supervisor, Electric Operators, Michigan Public Service Commission (w/o attachments)
Michigan Department of Environmental Quality Radiological Protection and Medical Waste Section (w/o attachments)

Attachment 1
NRC3-10-0008

Response to RAI Letter No. 20
(eRAI Tracking No. 4096)

RAI Question No. 03.05.01.05-1

NRC RAI 03.05.01.05-1

RG 1.206 and NUREG-0800 Section 3.5.1.5 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. A postulated failure of a turbine from Fermi Unit 2 could result in a missile representing an external hazard to the safe operation of Fermi Unit 3, a scenario that has not been addressed in the COL application, Part 2, FSAR for Fermi 3. Provide a discussion on the impact a potential missile from Unit 2 turbine would have on Unit 3.

Response

Regulatory Guide (RG) 1.115 "Protection Against Low-Trajectory Turbine Missiles", Figure 1 "Low Trajectory Turbine Missile Strike Zone", identifies the turbine missile strike zone (consistent with DG-1217). RG 1.115, Section B, states (consistent with DG-1217):

> "Consideration of turbine missile protection is relevant for essential systems, i.e., those structures, systems, and components necessary to ensure:
> 1. The integrity of the reactor coolant pressure boundary,
> 2. The capability to shut down the reactor and maintain it in a cold shutdown condition or
> 3. The capability to prevent accidents that could result in potential offsite exposures that are a significant fraction of the guideline exposures of 10 CFR Part 100, "Reactor Site Criteria.""

Applying the angles in RG 1.115 Figure 1 to the Fermi site layout (FSAR Figure 2.1-204), beginning at the southeast corner of the Fermi 2 Turbine Building, there are no Fermi 3 essential systems within the strike zone identified by RG 1.115. Therefore, because of the turbine orientation and offsets, turbine missiles from Fermi 2 would not affect the safe operation of Fermi 3.

Proposed COLA Revision

None.

Attachment 2
NRC3-10-0008

Response to RAI Letter No. 20
(eRAI Tracking No. 4097)

RAI Question No. 03.05.01.06-1

NRC RAI 03.05.01.06-1

RG 1.206 and NUREG-0800 Section 3.5.1.5 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. In Fermi 3 COL FSAR, Section 2.2.3.1.3.1, the applicant presented the aircraft impact probability of 2.3 x 10^{-7} per year from the Mills Field Airport. No details regarding input data and assumptions were presented to support the analysis in calculating the aircraft impact frequency for Mills Field Airport and Detroit Metropolitan Wayne County Airport. Provide the data and assumptions (i.e., effective area of plant, in-flight crash probability, annual flight operations projected to the end life operational period of the plant) used for Airports and Airways analyses. Also provide the basis for the use of effective area of 0.030 sq mi and estimated average number of flights of 60179 per year for the airways.

Response

The data and assumptions for airports and airways aircraft crash probability analyses are presented below. Inputs and assumptions for effective area of plant, in-flight crash probability, and annual flight operations projected to the end life operational period of the plant are presented. During review, it was discovered that the effective area of the plant, which was calculated for general aviation aircraft, was inappropriately applied to the airways analyses. This has been corrected and an effective area of the plant for commercial aviation air carriers was calculated and applied in the airways analyses presented below. This review also applied updated data for the distances from airways to the plant as discussed below. The updated analyses and the associated proposed COLA revision, support the original conclusions presented in FSAR Chapters 2 and 3, that the aircraft accident probability is on the order of magnitude of 10^{-7} per year, within the NUREG-0800 guidelines to support the conclusion that further analyses or discussion of potential aircraft hazards is not necessary.

Civilian and Military Airports and Heli-Ports (NUREG-0800 3.5.1.6.III.3)
Based on the distance and number of operations of nearby airports, as presented in FSAR Table 2.2-204, two airports located near the Fermi site require crash probability analyses. The probability of an aircraft crash originating from Detroit Metropolitan Wayne County Airport or Mills Field Airport was determined using the methods prescribed in NUREG-0800 Section 3.5.1.6, and supplemented by DOE Standard DOE-STD-3014-2006, "Accident Analysis for Aircraft Crash into Hazardous Facilities" (DOE-STD-3014). The aircraft crash probability due to nearby airports was calculated to be 2.3 x 10^{-7}. The equation for the probability of an aircraft crashing into the site for airports, as discussed in NUREG-0800 Section 3.5.1.6, is as follows:

$$P_A = \sum_{i=1}^{L} \sum_{j=1}^{M} C_j N_{ij} A_j$$

where:
P_A = probability per year of an aircraft crashing into the site
M = number of different types of aircraft using the airport

L = number of flight trajectories affecting the site
C_j = probability per square mile of a crash per aircraft movement, for the jth aircraft
N_{ij} = number (per year) of movements by the jth aircraft along the ith flight path
A_j = effective plant area (in square miles) for the jth aircraft

The equation is a summation of the probabilities of crashes of different types of aircraft using the airport. The crash probability of each aircraft (*Cj*) for Mills Field Airport is 3.8×10^{-8}, based on the distance from the end of the runway to the plant for general aviation as shown in NUREG-0800 Section 3.5.1.6. As NUREG-0800 Section 3.5.1.6 does not provide information for crash probabilities beyond 10 miles, DOE-STD-3014 was used for Detroit Metropolitan Wayne County Airport located 19 miles away from the plant. The tables in Appendix B of DOE-STD-3014 do not list a value for the probability of a crash at the distance between Fermi 3 and Detroit Metropolitan Wayne County Airport. Per the last paragraph of Section B.3.3 of DOE-STD-3014:

> "If the facility's coordinate falls outside the boundaries of any of the tables or falls in a bin where no value is given, the corresponding probability value is assumed to be zero."

The crash probability (*Cj*) for aircraft from Detroit Metropolitan Wayne County Airport in the equation is 0. Therefore the probability predicted by the above equation of aircraft crashing into Fermi 3 from Detroit Metropolitan Wayne County Airport is zero. The only Fermi 3 airport impact with a crash probability is Mills Field Airport, and as noted in FSAR Section 2.2.3.1.3.1, Mills Field Airport is a small turf field, consisting of single engine aircraft which pose minimal risk to vital structural damage.

The annual numbers of flight operations and types of aircraft for Mills Field Airport and Detroit Metropolitan Wayne County Airport are shown in FSAR Table 2.2-204.

The effective plant area was calculated using Equations B-3 thorough B-5 of DOE-STD-3014. The effective area varies depending on the type of aircraft under consideration. For the general aviation aircraft of Mills Field Airport, the effective area is 0.030 sq mi. This area was appropriately applied to the Airport analyses (note that the Detroit Metropolitan Wayne County Airport aircraft crash probability is zero, precluding the use of effective area calculations for commercial aviation air carriers). For the airways analyses presented below, the effective area for commercial aviation air carriers operating from Detroit Metropolitan Wayne County Airport is 0.0679 sq mi, which should have been used in the airways analysis. This is corrected in the discussion below and the FSAR will be revised to reflect the effective area corresponding to commercial aviation air carriers for airways crash probability analyses.

Airways (NUREG-0800 3.5.1.6.III.2)
The probability of aircraft crashing into the plant from airways which pass through the vicinity of the site is calculated for each airway that passes within 2 miles of Fermi 3. Inputs include: in

flight crash rate, width of airway, distance to airway, number of flights per year, and effective area of the plant. The accident probability for airways which pass through the vicinity of Fermi 3 is 3.27×10^{-7}.

The acceptance criteria outlined in NUREG-0800 Section 3.5.1.6 for aircraft accidents that cannot be screened out by inspection is:

> "2. If the above proximity criteria are not met, or if sufficiently hazardous military activities are identified (see item B above), a detailed review of aircraft hazards must be performed. Aircraft accidents that could lead to radiological consequences in excess of the exposure guidelines of 10 CFR Part 100 with a probability of occurrence greater than an order of magnitude of 10^{-7} per year should be considered in the design of the plant. If the results of the review do not support a finding that the risk from aircraft activities is acceptably low, then the design-basis acceptance criteria outlined in GDC 4 applies."

Two airways required further analysis based on proximity, V10-176-188 and V383 are within 2 miles of the plant. The estimated number of flights along airways V10-176-188 and V383 was determined by using the total number of annual operations at Detroit Metropolitan Wayne County Airport as shown in FSAR Table 2.2-204 (481,435), divided by the number of airways that originate at the airport (eight):

$$\frac{481{,}435}{8} = 60{,}179$$

The 2008 statistical data provided by the Detroit Metropolitan Wayne County Airport (http://www.metroairport.com/about/facts.asp) states that the 462,520 aircraft operations in 2008 were the 11th most in North America and 15th in the world. These values are less than those used to perform the analysis, but illustrate a consistent operation of less than 500,000 flights per year and show that Detroit Metropolitan Wayne County Airport is a large airport. The total of the impact probabilities for airways is 3.27×10^{-7}; the number of annual operations at Detroit Metropolitan Wayne County Airport would need to triple to reach a 10^{-6} order of magnitude. As Detroit Metropolitan Wayne County Airport is already one of the 20 busiest airports in the world, it is not likely to see the three fold increase in operations that would result in accident probabilities for airways increasing above an order of magnitude. Therefore, the use of 481,435 for annual total operations is acceptable for determining the order of magnitude for the aircraft impact probability due to airways.

FSAR Figure 2.2-202 shows the location of airways relative to Fermi 3. The estimate for the number of operations for each airway, averages the annual Detroit Metropolitan Wayne County operations by the number of airways in use at the airport. This operations estimate effectively analyzes 25% of all flights from Detroit Metropolitan Wayne County, a very busy airport, passing within 2 miles of Fermi 3. Applying the Detroit airway average to the two airways near Fermi is conservative, because these two airways do not both originate or terminate at Detroit.

The 120,358 estimated number of flights for the two airways near Fermi, represent ¼ of the very large number of Detroit Metropolitan Wayne County annual operations, and is conservatively high.

Previously, airway width was cited as 8 miles per 14 CFR 71.75; however, the current version of 14 CFR does not include 14 CFR 71.75, and the airway width is listed in 14 CFR 95.1 as 8 nautical miles (9.2 statute miles). This clarification required the table in Section 2.2.3.1.3.2 to be revised, including a revision of the conservative rounding applied to Airway V133.

As discussed above, the airway crash analysis in the FSAR will be updated to reflect the use of the effective area for commercial aviation air carriers operating from Detroit Metropolitan Wayne County Airport of 0.0679 sq mi. It should be noted that this is a conservative method as it assumes all flights are air carriers and does not take credit for the number of commercial aviation air taxis which would have a smaller effective area.

The calculated effective area of Fermi 3 does not account for barriers that would reduce the plant's area. The Equations B-3 thorough B-5 of DOE-STD-3014 do not account for physical barriers. These barriers would prevent direct collisions with airplanes and the structures, and would reduce the skid lengths for impacts. Physical barrier examples include:

- Fermi 3 Turbine Building
- Fermi 3 Radwaste Building
- Fermi 3 Electrical Building
- Fermi 3 Natural Draft Cooling Tower
- Fermi 3 Mechanical Draft Cooling Towers
- Fermi 3 Hot Machine Shop
- Fermi 3 Water Storage Tanks
- Fermi 3 Service Building/Operation Support Center.
- Transmission lines from Fermi 2 and Fermi 3
- Fermi 2 Natural Draft Cooling Towers
- Fermi 2 Power Block
- Fermi 2 Administration Building
- Multi-level parking garage for Fermi 2 and Fermi 3 workers
- 7 ft grade elevation of Fermi 3 Power Block
- Lake Erie
- South Lagoon
- Forested area west of the site

As shown on FSAR Figure 2.2-202, Airway V10-176-188 is located north of Fermi 3 and runs east and west, while Airway V383 is located west of Fermi 3 and runs north and south. Barriers are provided for the north side of the Fermi 3 safety-related structures from the Turbine Building, Electrical Building, Radwaste Building, and from the Fermi 2 cooling towers. Barriers are provided for the west side of the Fermi 3 safety-related structures from the 600 ft natural draft cooling tower. The area northwest of the Fermi 3 safety related structures is a wooded marsh, and the area south of the Fermi 3 safety-related structures is a lagoon; these areas would also provide protection from skidding aircraft by reducing the length of land available. The barriers to

an aircraft impact, either direct or by skidding, provided by these structures and natural features, were not taken into consideration when determining the effective area.

The accident probability for airways V10-176-188 and V383 is 1.6×10^{-7}, based on the inputs discussed above (60,179 flights per year per airway and an effective plant area of 0.0679 sq mi) and the analyses presented in Fermi 3 FSAR Section 2.2.3.1.3.2.

Total Aircraft Impact Probability and Conclusions

The combined total of the revised impact probabilities for Airways V10-176-188 and V383 is 3.27×10^{-7}. This impact probability is based on 25% of all flights from Detroit Metropolitan Wayne County Airport passing within 2 miles of Fermi 3, assuming all flights are commercial aviation carriers, and does not take credit for the reduced effective plant area due to surrounding structures and natural barriers.

The probability of impact due to Mills Field Airport of 2.3×10^{-7} from FSAR Section 2.2.3.1.3.1 should not be included in the overall probability total. As noted in FSAR Section 2.2.3.1.3.1, Mills Field Airport is a small turf field consisting of single engine aircraft that pose minimal risk to vital structures, and the calculated probability of 2.3×10^{-7} does not take credit for the reduced effective plant area due to surrounding structures and natural barriers. Further in DCD Revision 6, Appendix 19D provides an assessment of malevolent aircraft impacts, and DCD Appendix 19D, Section 19D.5 states:

> "This assessment concludes that key design features and functional capabilities of the ESBWR ensure adequate protection of public health and safety in the event of an impact of a large commercial aircraft, as defined by the NRC. The postulated aircraft impacts would not inhibit the ESBWR core cooling capability, and spent fuel pool integrity would be maintained, based on best estimate calculations. The assessment resulted in identification of key design features and functional capabilities described in Section 19.D.4, changes to which are required to be controlled in accordance with 10 CFR 50.150(c)."

This section of the DCD indicates that the ESBWR can survive a direct impact from a large commercial aircraft. Therefore, the risk posed by the small single engine aircraft at Mills Field Airport is not included in the total impact probability.

The resulting total aircraft impact probability is 3.27×10^{-7} which is on the order of magnitude of 10^{-7}. Therefore, the risk from aircraft activities is acceptably low and no further analysis or discussion of potential aircraft hazards is necessary.

Proposed COLA Revision

Proposed revisions to FSAR Section 2.2.3.1.3.2 are shown in the attached markups.

Markup of Detroit Edison COLA
(following 5 pages)

The following markup represents how Detroit Edison intends to reflect this RAI response in the next submittal of the Fermi 3 COLA Revision 2. However, the same COLA content may be impacted by revisions to the ESBWR DCD, responses to other COLA RAIs, other COLA changes, plant design changes, editorial or typographical corrections, etc. As a result, the final COLA content that appears in a future submittal may be different than presented here.

2.2.3.1.2 Flammable Vapor Clouds (Delayed Ignition)

The largest potential effect from the nearby residential and commercial natural gas service pipelines might occur in the form of a natural gas leak and subsequent limited impact explosion. Potential explosions from the pipeline would not pose a danger to the safe operation of the plant, due to the size and location of the pipeline.

The nearest storage tank farm for flammable gases is the bulk gas storage facility for the Hydrogen Water Chemistry and Generator Hydrogen systems. Table 2.2-203 lists the maximum quantities of flammable gas (hydrogen) and gas that supports combustion (oxygen) stored at Fermi site. The safe separation distance between the hydrogen and oxygen storage area and the nearest safety-related structures is 229 m (750 ft).

The nearest storage of flammable liquids is 5.5 km (3.4 mi) away where diesel fuel and gasoline are stored (Table 2.2-202). The potential explosion of an individual tank is well below the limits specified in RG 1.91. The potential formation and detonation of a flammable vapor cloud is not a design basis event due to the size and distance of the tanks.

2.2.3.1.3 Aircraft Hazards

Regulatory Guide 1.206 and NUREG-0800 state that the risks due to aircraft hazards should be sufficiently low. Further, aircraft accidents that could lead to radiological consequences in excess of the exposure guidelines of 10 CFR 50.34 (a) (1) with a probability of occurrence greater than an order of magnitude of 10^{-7} per year should be considered in the design of the plant.

NUREG-0800, Section 3.5.1.6, “Aircraft Hazards,” provides three acceptance criteria for the probability of aircraft accidents to be less than 10^{-7} per year:

A. The plant-to-airport distance D is between 5 and 10 statute mi, and the projected annual number of operations is less than 500 D^2, or the plant-to-airport distance D is greater than 10 statute mi, and the projected annual number of operations is less than 1000 D^2

B. The plant is at least 5 statute mi from the nearest edge of military training routes, including low-level training routes, except for those associated with usage greater than 1000 flights per year, or

where activities (such as practice bombing) may create an unusual stress situation

C. The plant is at least 2 statute mi beyond the nearest edge of a Federal airway, holding pattern, or approach pattern

2.2.3.1.3.1 Airports

As shown on Figure 2.2-202, there are 4 airports within 16 km (10 mi) of Fermi 3. Mills Field Airport is less than 8 km (5 mi) from Fermi 3 and is further evaluated below -.

There is 1 airport outside the 16 km (10 mi) radius which does not meet the acceptance criterion A above - Detroit Metropolitan Wayne County Airport. Table 2.2-204 shows that the Detroit Metropolitan Wayne County Airport is 30.6 km (19 mi) from the Fermi site, accordingly:

$1000D^2 = 1000(19)^2 = 361,000$

The number of operations per year at the Detroit Metropolitan Wayne Country Airport is 481,435. This value is larger than the $1000D^2$ calculated value based on Section 3.5.1.6, Section III of NUREG 0800.

An evaluation of the probability of an aircraft accident affecting Fermi 3 from the Mills Field Airport or Detroit Metropolitan Wayne County was performed. The probability for an accident from the Detroit Metropolitan Wayne County Airport is less than 10^{-7} per year. The probability of an accident from the Mills Field Airport is slightly in excess of 10^{-7} per year ($2.3x10^{-7}$ accidents per year). This airport is a small turf field consisting of single engine aircraft which poses minimal risk to vital structure damage.

2.2.3.1.3.2 Airways

As described in Subsection 2.2.2.7, there are 6 airways passing within 10 mi of the Fermi 3 site. Each airway is 13 km (8 mi) in width in accordance with 14 CFR 71.75. The distance from Fermi 3 site to the edge of each airway is:

Route	Distance to Centerline	Width	Distance to Edge
V383	8 km (5 mi)	13 km (8 mi)	1.6 km (1 mi)
V10-176-188	8 km (5 mi)	13 km (8 mi)	1.6 km (1 mi)
V133	10.5 km (6.5 mi)	13 km (8 mi)	4 km (2.5 mi)

Route	Distance to Centerline	Width	Distance to Edge
V426	11.3 km (7 mi)	13 km (8 mi)	4.8 km (3 mi)
V26	12.1 km (7.5 mi)	13 km (8 mi)	5.6 km (3.5 mi)
V467	14.5 km (9 mi)	13 km (8 mi)	8 km (5 mi)

Airways V383 and V10-176-188 pass within 3.2 km (2 mi) of Fermi 3 and are further evaluated below. Section 3.5.1.6, Section III of NUREG-0800 states:

> For situations in which Federal airways or aviation corridors pass through the vicinity of the site, the probability per year of an aircraft crashing into the plant (P_{FA}) should be estimated. This probability will depend on a number of factors, such as the altitude and frequency of the flights, the width of the corridor, and the corresponding distribution of past accidents. P_{FA} is found by using the following equation:
>
> $$P_{FA} = C \times N \times A/w \qquad [Eq. 1]$$
>
> where:
>
> C = in-flight crash rate per mile for aircraft using airway
> w = width of airway (plus twice the distance from the airway edge to the site when the site is outside the airway) in miles
> N = number of flights per year along the airway
> A = effective area of plant in square miles

This gives a conservative upper bound on aircraft impact probability if care is taken in using values for the individual factors that are meaningful and conservative. From NUREG-0800, for commercial aircraft a value of $C = 4 \times 10^{-10}$ per aircraft mile has been used.

The estimated number of flights per year on V383 is 60,179; the average number of flights per day is 165:

C = 4×10^{-10}
w = 8 mi + 2 x (1 mi) = 10 mi
N = 60,179
A = 0.030 sq. mi.
$P_{FA} = 4 \times 10^{-10} \times 60{,}179 \times (0.030/10) = 7.2 \times 10^{-8} << 10^{-7}$

The number of flights per year on V10-176-188 is bounded by the number of flights on V383, therefore a value of 60,179 is used; the average number of flights per day is 165:

$C = 4 \times 10^{-10}$
$w = 8 \text{ mi} + 2 \times (1 \text{ mi}) = 10 \text{ mi}$
$N = 60{,}179$
$A = 0.030 \text{ sq. mi.}$
$P_{FA} = 4 \times 10^{-10} \times 60{,}179 \times (0.030/10) = 7.2 \times 10^{-8} << 10^{-7}$

This accident probability is within the NUREG-0800 guidelines of less than 10^{-7} per year. No further analysis or discussion of potential aircraft hazards is necessary.

2.2.3.1.4 Toxic Chemicals

The potential accidental release of toxic chemicals is considered to evaluate the habitability of the main control room. Chemicals require evaluation if they are within 500 m (0.3 mi) of the main control room in a quantity of 45.4 kg (100 lbs) or greater, according to Regulatory Guide 1.78. Hazardous or potentially toxic chemicals within 8 km (5 mi) of the site also require evaluation; however, chemicals beyond an 8 km (5 mi) radius of the site do not require analysis. Mobile sources of chemicals within 8 km (5 mi) require analysis if a sufficient frequency of shipments exists.

2.2.3.1.4.1 Onsite Sources of Toxic Chemicals – Fermi 2 & 3

Onsite chemicals are listed in Table 2.2-203, including chemicals at Fermi 2 and Fermi 3. Chemicals that could pose a possible toxic, flammable, or explosive hazard to Fermi 3 are shown in Table 2.2-205, toxic chemicals analysis is summarized.

2.2.3.1.4.2 Offsite Stationary Sources of Toxic Chemicals

Offsite chemicals within an 8-km (5-mi) radius of the Fermi site are listed in Table 2.2-202. Only potentially toxic chemicals require evaluation.

The nearest location containing potentially toxic or hazardous chemicals is the Berlin Township Water Treatment Plant, 3.4 km (2.1 mi) northwest of Fermi 3. This location contains chlorine; however, no further analysis is required based on RG 1.78. Meijer Distribution also contains several chemicals that were evaluated and screened out using the criteria in RG

Insert “1”

Route	Distance to Centerline	Width	Distance to Edge
V383	8 km (5 mi)	14.7 km (9.2 mi)	0.6 km (0.4 mi)
V10-176-188	8 km (5 mi)	14.7 km (9.2 mi)	0.6 km (0.4 mi)
V133	10.9 km (6.75 mi)	14.7 km (9.2 mi)	3.5 km (2.2 mi)
V426	11.3 km (7 mi)	14.7 km (9.2 mi)	3.8 km (2.4 mi)
V26	12.1 km (7.5 mi)	14.7 km (9.2 mi)	4.6 km (2.9 mi)
V467	14.5 km (9 mi)	14.7 km (9.2 mi)	7 km (4.4 mi)