

Disaster Accountability Project



Report On Emergency Evacuation Planning for Enrico Fermi Nuclear Generating Station

Frenchtown Charter Township, Michigan

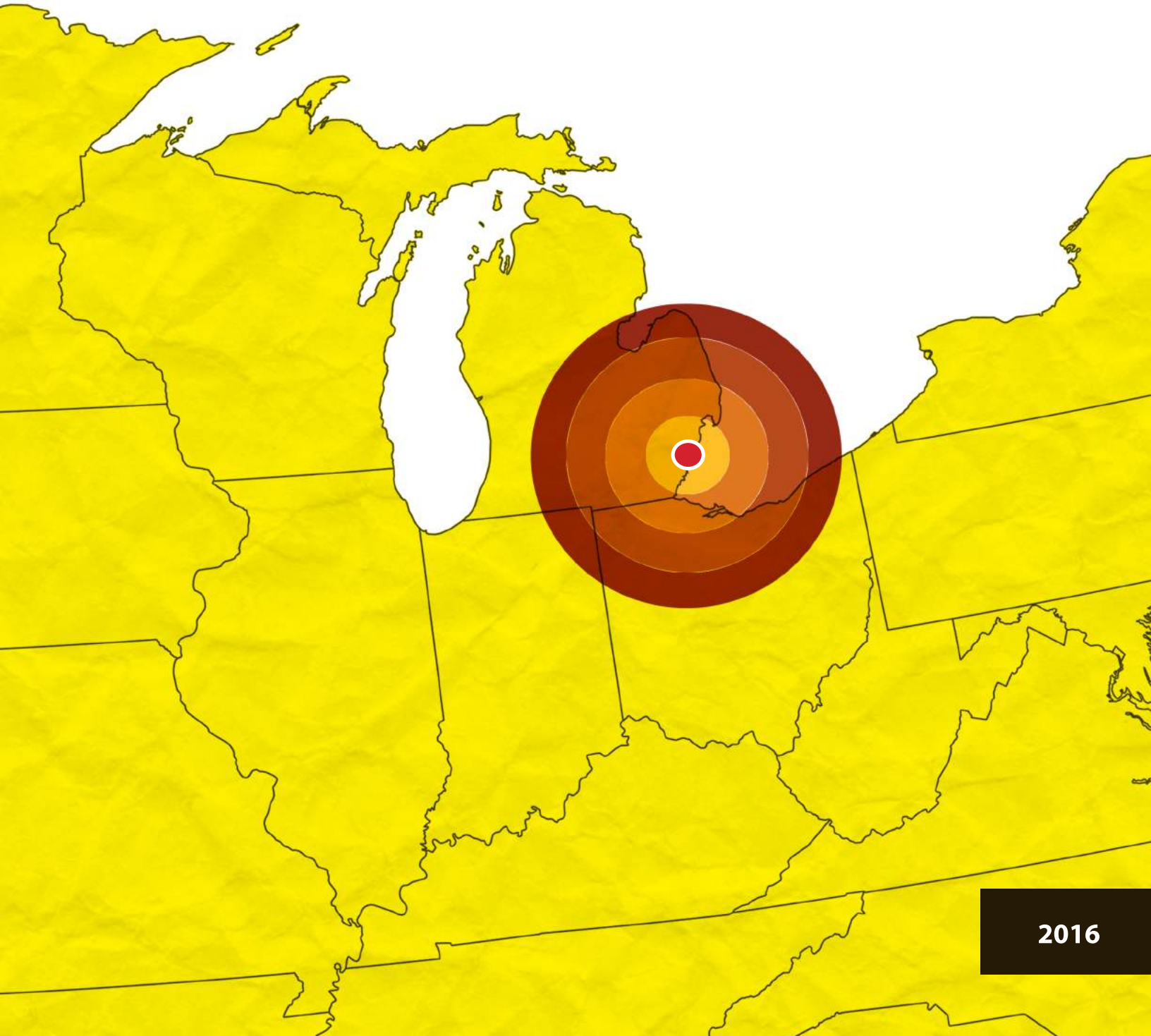


Table of Contents

<u>About Disaster Accountability Project</u>	2
<u>Acknowledgements</u>	2
<u>The U.S. Government Accountability Office’s Report Recommending Improved Emergency Preparedness Surrounding Nuclear Power Stations</u>	3-5
<u>Enrico Fermi Nuclear Generating Station and the Population within 50 Miles</u>	5
<u>Fig. 1 - 10-mile radius from Enrico Fermi Nuclear Generating Station- Emergency Planning Zone (shaded area)</u>	6
<u>Fig. 2 - 50-mile radius from Enrico Fermi Nuclear Generating Station (shaded area)</u>	7
<u>DAP Survey of Jurisdictions within 50 miles of Enrico Fermi Nuclear Generating Station</u>	8
<u>Table 1. Responses to DAP’s Document Requests</u>	9-11
<u>Jurisdictions Located within 10 Miles: None Provided a Shadow Evacuation Plan</u>	11-12
<u>Jurisdictions Located Between the 10-Mile and 50-Mile Radius: None Provided a Shadow Evacuation Plan</u>	12-13
<u>Conclusion: Public Education and Shadow Evacuation Planning are Inadequate within the 50-mile radius of the Enrico Fermi Nuclear Generating Station</u>	13-14
<u>Appendix A: Index of Documents Received from Jurisdictions within 50 miles of Enrico Fermi Nuclear Generating Station</u>	15-17
<u>Appendix B: Disaster Accountability Project History and Projects</u>	18-19

About Disaster Accountability Project

Disaster Accountability Project (DAP) saves lives and reduces suffering after disasters by maximizing the impact of preparedness, response, and relief through citizen oversight and engagement, policy research and advocacy, and public education.

DAP is the leading nonprofit organization providing long-term independent oversight of disaster management systems.

DAP engages a dedicated community to

- advance policy research and advocacy,
- promote transparency, and
- encourage the public to participate in oversight and lead discussions about disaster preparedness and relief.

Dedicated citizen oversight is necessary to ensure that preparedness, relief, and recovery are effective; communities are sufficiently engaged and more resilient; and best practices and lessons learned are implemented so that mistakes are not repeated.

Prior to the creation of DAP, there was no organization providing independent oversight of the agencies and organizations responsible for these critical life-saving responsibilities.

Additional information concerning DAP's ongoing disaster accountability efforts can be found at the organization's website: <http://www.disasteraccountability.org/>.

Acknowledgements

Many thanks to Veronica Bailey, Alison Shih, Jana Wilson, Roxanne Lin, Lisa Charles, Russell Rollow, Arsalan Kashfi, Karishma Dudani, Nicholas Boland - Cairney, Chinasa Udeinya, Nicole Corteling, Esther Choi, Bryan Carey, Mark Williams, Erika Lancaster, Jehu Johnson, and many other DAP volunteers and interns for their varied efforts in producing this report.

The following report is part of a DAP initiative to investigate emergency planning and public awareness in the areas surrounding nuclear power plants operating in the United States.

The U.S. Government Accountability Office's Report Recommending Improved Emergency Preparedness Surrounding Nuclear Power Stations

In March 2013, the U.S. Government Accountability Office (GAO) released a report entitled *EMERGENCY PREPAREDNESS: NRC Needs to Better Understand Likely Public Response to Radiological Incidents at Nuclear Power Plants*.¹ GAO prepared its report in response to the nuclear emergency that resulted from the March 2011 earthquake and tsunami that severely damaged the Fukushima Dai-ichi nuclear power plant in Japan, and led to the largest release of radiation since the 1986 Chernobyl nuclear plant disaster.² As a consequence of radiation release, Japanese authorities evacuated nearly 150,000 people located within 19 miles of the stricken plant.³

At the same time, the United States Nuclear Regulatory Commission (NRC) recommended that U.S. citizens in Japan evacuate the area if they were located within 50 miles of the Fukushima Dai-ichi plant.⁴ The NRC recommendation stated that “[u]nder **the guidelines for public safety that would be used in the United States under similar circumstances, the NRC believes it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate.**”⁵ The NRC recommendation was also broadcasted to U.S. citizens in Japan via a travel warning on the U.S. Embassy website in Japan.⁶ The NRC recommendation to evacuate a 50-mile zone exceeded the 10-mile emergency planning zone that is the current standard for nuclear plant emergency planning in the United States.

In the United States, the Federal Emergency Management Agency (FEMA) is responsible for overseeing preparedness by state and local authorities situated near nuclear plants.⁷ NRC regulations have established 10-mile emergency planning zones around domestic nuclear power plants.⁸ Local and state authorities within the 10-mile zone must develop protective action plans for responding to a radiological incident that include evacuations and sheltering in place.⁹ Local and state authorities also must provide information on radiation and protective actions to residents of the 10-mile zone on an annual basis.¹⁰

Subsequent to the Fukushima Dai-ichi disaster, the NRC has considered the adequacy of the 10-mile emergency planning zone size and has determined that no expansion is necessary.¹¹ The NRC concluded that a 1979 policy statement provides basis for the 10-mile emergency planning zone, including an

¹ United States Government Accountability Office. *Emergency Preparedness: NRC Needs to Better Understand Likely Public Response to Radiological Incidents at Nuclear Power Plants*. Washington, D.C.: Government Accountability Office, March 2013, GAO-13-243 (available at <http://www.gao.gov/products/GAO-13-243>).

² *Id.* at 1.

³ *Id.*

⁴ See *NRC Provides Protective Action Recommendations Based on U.S. Guidelines*, No. 11-050, March 16, 2011 (available at <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-050.pdf>).

⁵ *Id.* (emphasis added).

⁶ See U.S. Department of State Travel Warning, March 17, 2011, <http://japan.usembassy.gov/e/acs/tacs-travel20110317.html>.

⁷ United States Government Accountability Office, *supra* note 1. See also <http://www.fema.gov/radiological-emergency-preparedness-program>.

⁸ See 10 CFR 50.47(c)(2).

⁹ United States Government Accountability Office, *supra* note 1, at 5.

¹⁰ See 10 CFR 50 Appendix E Section IV.D.2.

¹¹ See *Program Plan for Basis of Emergency Planning Zone Size*, July 13, 2012 (ADAMS Accession No. ML12208A210).

assumption that the planning conducted for 10 miles provides a substantial basis for expansion of the emergency planning zone should it ever be necessary.¹² In 2014, the NRC reiterated its position when it denied a petition for rulemaking filed by the Nuclear Information and Resource Service and its co-competitors in an effort to modify the NRC's emergency planning rules.¹³ NRC's denial of the petition cited a lack of information available to government decision makers at the time of the 2011 Japanese incident and downplayed NRC's 50-mile evacuation recommendation, characterizing it as a "travel advisory."¹⁴

In support of maintaining the current 10-mile planning zone standard, NRC states that the information available to it during an incident on U.S. soil would be improved due to the presence of on-site NRC inspectors and direct communication lines from U.S. plants.¹⁵ Further, the NRC emphasized that "[s]tate and local authorities have **a robust capacity** to effectively evacuate the public in response to life-threatening emergencies."¹⁶ DAP questions the veracity of NRC's assertions regarding preparedness adequacy and effectiveness, especially given the current lack of planning outside the 10-mile zone.

GAO's report concludes that, because residents beyond the 10-mile planning zone do not receive the safety and planning information that residents within the 10-mile zone do and, due to their lack of knowledge, may choose to evacuate even though they may be outside of the hazard area. Such "shadow evacuations" have the potential to delay evacuation of people most immediately in danger of exposure to radiological materials and are incorporated into evacuation time estimates.¹⁷ The GAO Report states:

[C]ommunities outside the 10-mile zone generally do not receive the same level of information as those within the 10-mile zone and therefore may not be as knowledgeable about appropriate conduct during a radiological emergency as those inside the zone and may not respond in a similar manner. If the public outside the zone evacuates unnecessarily at a greater rate than expected, these shadow evacuations would put additional traffic on roadways, possibly delaying the evacuation of the public inside the emergency planning zone and potentially increasing the risk to public health and safety. However, because neither NRC nor FEMA have examined public awareness outside of the 10-mile emergency planning zone, they do not know how the public outside this zone will respond. Specifically, they do not know if a 20-percent estimate of shadow evacuations is reasonable. Therefore, licensee evacuation time estimates may not accurately consider the impact of shadow evacuations. **Without estimates of evacuation times based on more solid understanding of public awareness, licensees and NRC and FEMA cannot be confident about the reliability of their estimates. If shadow evacuations are not correctly estimated, planning for a radiological emergency may not sufficiently consider the impact of the public outside the emergency planning zone.**¹⁸

¹² *Id.*; see also 44 FR 61123, Oct. 23, 1979.

¹³ See Petition for Rulemaking; denial, 79 FR 19501 (Apr. 9, 2014).

¹⁴ See *id.* at 19506-07.

¹⁵ *Id.*

¹⁶ *Id.* at 19505 (emphasis added).

¹⁷ See NRC, *Criteria for Development of Evacuation Time Estimate Studies*, NUREG/CR-7002 (Albuquerque, New Mexico: November 2011) at viii (available at <http://pbadupws.nrc.gov/docs/ML1130/ML113010515.pdf>).

¹⁸ *Id.* at 26 (emphasis added).

In light of the GAO's findings and conclusions, DAP surveyed current local emergency preparedness efforts and the level of information provided to the public regarding radiological emergencies within a 50-mile radius of the Enrico Fermi Nuclear Generating Station (hereinafter "Fermi Plant"), a nuclear power station located less than 50 miles from both Detroit, Michigan (the 10th largest metropolitan area in the United States) and Toledo, Ohio (the 57th largest metropolitan area).¹⁹

Enrico Fermi Nuclear Generating Station and the Population within 50 Miles

The Fermi Plant is a nuclear power station with two operating units, one of which is in SAFSTOR²⁰ and was permanently shut down in 1972 after a partial fuel meltdown.²¹ Plans for a third operating unit were approved by the NRC in May 2015, but the owner says there is presently no plan to build it.²² The plant is located in Frenchtown Charter Township in Monroe County, Michigan, approximately 21 miles from Detroit and 19 miles from Toledo. The power station is capable of generating about 1,198 megawatts of electricity. The plant is owned and operated by DTE Energy Electric Company (formerly the Detroit Edison Company, hereinafter "DTE Energy").²³ Every nuclear power plant operator is responsible for maintaining Evacuation Time Estimate (ETE) reports for NRC inspection and filing any updated reports with the NRC.²⁴

DTE Energy's ETE report filed with the NRC contemplates shadow evacuations from within the 10-mile emergency planning zone as well as a shadow region that is defined as the area between the 10-mile emergency planning zone border to a radius of approximately 15 miles from the Fermi Plant.²⁵

The DTE Energy report estimates that 101,913 people live within the shadow zone and assumes that 20% of those people would evacuate in a radiological emergency.²⁶ Any expansion of the shadow region to a 50-mile radius would significantly increase the population implicated in shadow evacuations. According to the Natural Resources Defense Council's 50-mile Potential Contamination Zone, the 2010 population total was 5,064,000 people.²⁷

Figures 1 and 2 show the stark geographic variation between the established 10-mile emergency planning zone for the Fermi Plant and a larger 50-mile geographic radius which corresponds to the recommended NRC evacuation area for the Fukushima Dai-ichi plant in 2011.²⁸

¹⁹ DAP determined Detroit and Toledo's ranks from a list of the 100 most populous cities in the U.S. See <http://www.city-data.com/top1.html>.

²⁰ SAFSTOR is a method of decommissioning a nuclear facility by maintaining it in a condition that permits its safe storage and subsequent decontamination. See <http://www.nrc.gov/reading-rm/basic-ref/glossary/safstor.html>.

²¹ See "We Almost Lost Detroit," John Grant Fuller. Originally published 1975 by Reader's Digest Press, re-published 1984 by Berkley, ISBN 0-425-06700-9.

²² See <http://www.freep.com/story/news/2015/04/30/fermi3-nuke-plant-approved/26659891/>.

²³ See <http://www.dteenergy.com/nuclear/>.

²⁴ See 10 CFR 50 Appendix E Section IV.5.

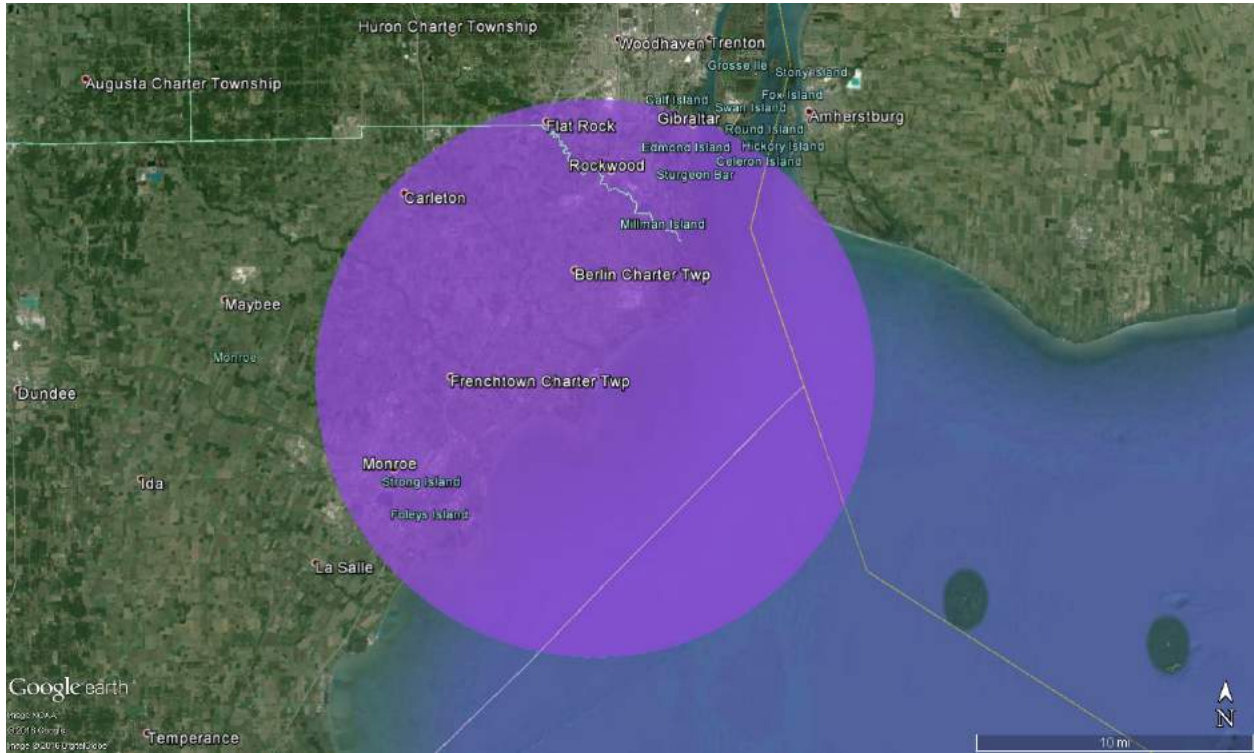
²⁵ See DTE Energy's evacuation plan at <http://pbadupws.nrc.gov/docs/ML1235/ML12356A180.pdf>.

²⁶ *Id.*

²⁷ See Natural Resources Defense Council at <http://www.nrdc.org/nuclear/fallout/>.

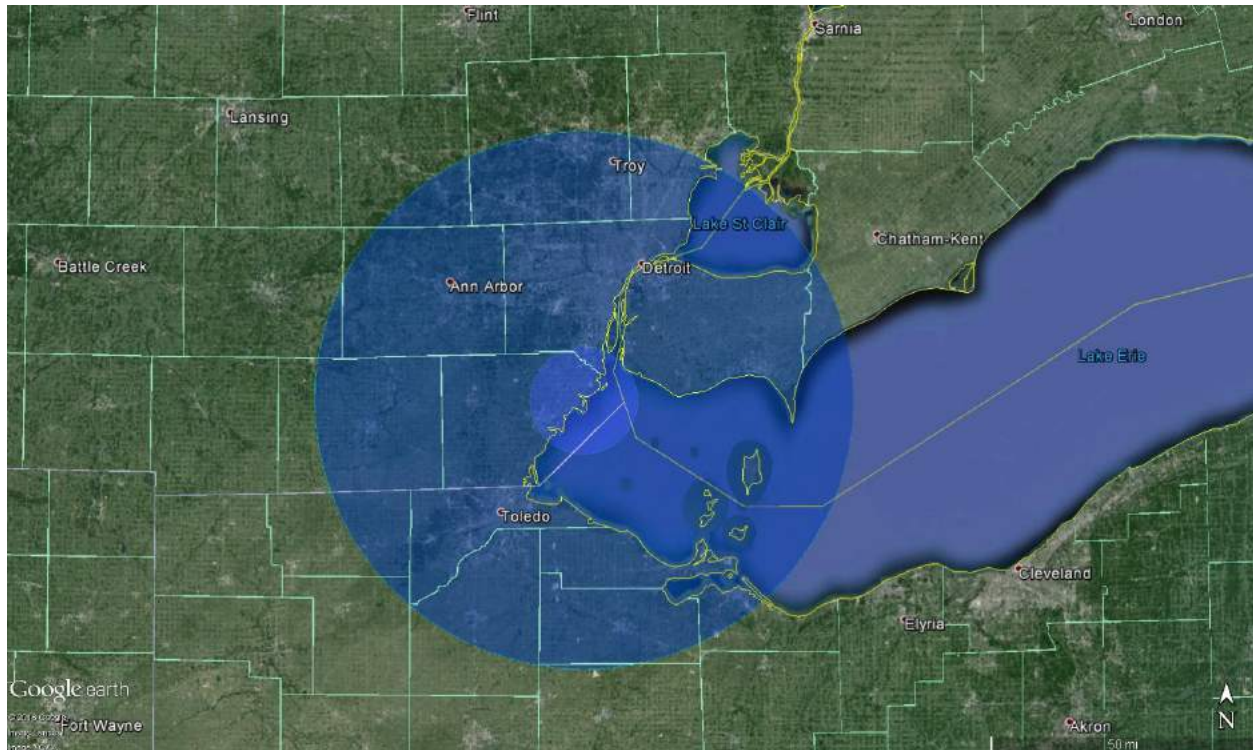
²⁸ The NRC also designates a 50-mile ingestion exposure pathway emergency planning zone from nuclear plants in its regulations. See 10 CFR 50.47(c)(2). The 50-mile emergency planning zone, however, is designated for the protection of food sources from radioactive fallout and the planning for the ingestion pathway does not contemplate evacuation or sheltering of the public beyond the 10-mile emergency planning zone. See United

Fig. 1 - 10-mile radius from Enrico Fermi Nuclear Generating Station - Emergency Planning Zone (shaded area)



States Government Accountability Office, *supra* note 1, at 6. DAP chose to survey the local jurisdictions in the geographic area within 50 miles of the Fermi Plant based on the real-world evacuation recommendation made by the U.S. government for Fukushima Dai-ichi emergency and not based on the current 50-mile ingestion exposure pathway standard.

Fig. 2 - 50-mile radius from Enrico Fermi Nuclear Generating Station (shaded area).



The 10-mile emergency planning zone encompasses one jurisdiction in Michigan, whereas the 50-mile radius stretches to 13 jurisdictions in Michigan and ventures to include 7 jurisdictions in Ohio. According to the Natural Resources Defense Council, 2010 population total for the 10-mile Evacuation Zone was 108,000 people, and for the 50-mile Potential Contamination Zone was 5,064,000 people.²⁹

²⁹ See Natural Resources Defense Council at <http://www.nrdc.org/nuclear/fallout/>.

DAP Survey of Jurisdictions within 50 miles of the Enrico Fermi Nuclear Generating Station

In August 2015, DAP sent 22 information requests to local jurisdictions³⁰ within the 50-mile radius of the Fermi Plant seeking the following four categories of documents and information:

1. Educational materials or plans provided to residents up to 50 miles away from the Fermi Plant regarding how to respond to a radiological incident at that plant;
2. All-hazard emergency plans and/or evacuation plans, including any materials regarding procedures to provide real-time information or instructions to residents during an emergency;
3. Emergency plans specific to radiological incidents at the Fermi Plant; and
4. All studies conducted on the likely rate of "shadow evacuations," defined by the GAO as "residents who evacuate during an emergency despite being told by authorities that evacuation is not necessary."

Table 1 details the responses from each jurisdiction. Appendix A lists the documents received from each jurisdiction.

³⁰ DAP canvassed the entire geographic area within a 50-mile radius around the Fermi Plant by contacting every county government and major city within the region. Contact DAP if information is needed regarding the jurisdictional office or agency responding to DAP's information requests.

Table 1. Responses to DAP’s Document Requests

Key

E - Jurisdiction stated that documents responsive to the request are exempt from disclosure

N - Jurisdiction stated that no documents exist or are in its possession

NR - Jurisdiction did not provide documents or written responses to the request

O - Jurisdiction did not provide responsive documents for another specified reason

P - Jurisdiction provided documents

State	Jurisdiction	Distance from Fermi Plant (miles) ³¹	Population ³²	Req. 1	Req. 2	Req. 3	Req. 4
MI	Monroe County	0	99,047	P ³³	E/P ³⁴	E/P ³⁵	N ³⁶
MI	Lenawee County	16	99,047	N	N	N	N
OH	Lucas County	17	437,201	N	O ³⁷	N	N
MI	Washtenaw County	17	356,874	N	N ³⁸	N ³⁹	N
OH	City of Toledo	19	281,031	N	P	N	N
MI	City of Detroit	21	680,250	N ⁴⁰	E	N ⁴¹	N ⁴²
MI	Wayne County	22	1,764,804	P	E	E	E

³¹ DAP used a web-based tool to find these distances. See <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>.

³² Most recent estimate by U.S. Census Bureau as of June 2014. See <http://quickfacts.census.gov/qfd/states/12/12011.html>

³³ “The provision of educational materials is a Power Plant Function.”

³⁴ Public evacuation plans provided by county officials.

³⁵ Provided evacuation routes only, claiming all radiological emergency plans were exempt.

³⁶ “County has not conducted studies for ‘shadow evacuations.’ Please be advised that evacuation areas, routes, and orders responsive to this specific request are provided by the Michigan State Police - Emergency Management Homeland Security Division and the Power Plant (DTE).”

³⁷ “The Lucas County [Emergency Operations Plan] resides at the Lucas County Library for public information.”

³⁸ County shared the Public Information Section of Emergency Action Guidelines for Washtenaw County, not the All-Hazard Emergency Operations Plan or an Evacuation Plan.

³⁹ “County has not specific plans for Enrico Fermi Atomic Power Plant.”

⁴⁰ “It is our understanding that the City of Detroit does not possess any record that corresponds to the description in your request.”

⁴¹ *Id.*

⁴² *Id.*

MI	City of Dearborn	23	95,535	N ⁴³	NR	N	N
OH	Ottawa County	24	41,355	N	P	N	N
OH	Wood County	25	128,708	N	P	N	N
MI	City of Livonia	27	94,958	N	P	N	N
MI	City of Ann Arbor	28	117,770	N/E ⁴⁴	N/E	N/E	N/E
OH	Sandusky County	32	60,461	N	O ⁴⁵	N	N
MI	Oakland County	33	1,237,9868	N	P	N ⁴⁶	N
MI	Macomb County	35	860,112	O ⁴⁷	O	O	O
MI	Warren County	35	135,099	N	E	N	N
OH	Fulton County	36	45,572	N	N ⁴⁸	N ⁴⁹	N
OH	Erie County	37	76,390	N	NR ⁵⁰	N	N
MI	Livingston County	38	185,596	N	P	N	N
MI	Sterling Heights	40	131,741	N ⁵¹	NR	N	N
OH	Henry County	46	28,085	N ⁵²	N ⁵³	N ⁵⁴	N

⁴³ "We have no information regarding this request. I spoke with our emergency management coordinator and was told that in the event of an emergency Dearborn would take direction from Wayne County."

⁴⁴ City provided a link to its Hazard Mitigation Plan and Public Emergency Management Information; neither provided any information responsive to DAP's request.

⁴⁵ "Our County Emergency Operations Plan (EOP) clearly defines our emergency plans. And is available for public review at the Birchard Library."

⁴⁶ No plan specific to the Fermi Plant provided.

⁴⁷ From Macomb County's Corporation Counsel: "The Macomb County Department of Roads is located in Mt. Clemens, Michigan. Mt. Clemens is located in Macomb County. The Enrico Fermi Power Plant is located in Monroe, Michigan. Monroe is located in Monroe County. The distance between the two is more than 62 miles southwest of the Macomb County Department of Roads. As a consequence, the Macomb County Department of Roads has no public records responsive to your request. Your request is, therefore, denied."

⁴⁸ County shared Annex D, J, and K of Emergency Operations Plan. Requested plans were not shared.

⁴⁹ County shared one Annex of Emergency Operations Plan that mentioned the Fermi Plant but it was not a plan specific to the plant.

⁵⁰ Did not answer question. Responded: "We do not have any evacuation plans specific to any power plants."

⁵¹ "Please be advised that the City of Sterling Heights is approximately 57 miles from the Fermi plant."

⁵² "We have none of this information but relay [sic] on the State Plan to provide us the necessary information."

⁵³ County shared Annex C, D, and J of Emergency Operations Plan. Requested plans were not shared.

⁵⁴ County shared exhibits of Emergency Operations Plan that mentioned the Fermi Plant but it was not specific to the plant.

OH	Seneca County	49	55,669	N	P	N ⁵⁵	N
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Summary of Responses: Overall

- 22 out of 22 (100%) of the jurisdictions provided responses to the information requests.⁵⁶
- The only jurisdiction (Monroe County) within 10 miles of the Fermi Plant and 1 (Wayne County) out of 21 jurisdictions between 10-50 miles of the Fermi Plant reported providing educational materials or plans to residents regarding how to respond to a radiological incident at that plant.
- 8 out of 22 (36%) of the jurisdictions provided all-hazard emergency plans and/or evacuation plans.
- Only 1 out of 22 (5%) of the jurisdictions (Monroe County) provided emergency plans specific to radiological incidents at the Fermi Plant.
- No jurisdiction furnished a shadow evacuation plan or study.

Summary of Responses: Within the 10-mile zone

- The only jurisdiction within 10 miles of the plant shared an emergency plan specific to radiological incidents at the Fermi Plant; the plan only included evacuation routes.

Summary of Responses: Outside the 10-mile zone

- None of the 21 jurisdictions outside the 10-mile zone provided emergency plans specific to radiological incidents at the Fermi Plant.

Jurisdictions Located within 10 Miles: None Provided a Shadow Evacuation Plan

Request 1: The only jurisdiction within 10 miles of the Fermi Plant (Monroe County) provided educational materials and/or plans as mandated by the NRC in the Code of Federal Regulations that only provided evacuation routes. Monroe County referred DAP to DTE’s plan but otherwise maintained that the all-hazard emergency plan was exempt from DAP’s request. This is notable since Monroe County lies within the 10-mile radius and is therefore legally required to provide residents with information on radiation and protective actions annually.⁵⁷ Yet, Monroe County refused to provide DAP with such inherently public and mandated information.

Twelve Jurisdictions between 10 and 50 miles of the Fermi Plant failed to furnish any educational materials or plans.

Request 2: Eleven jurisdictions (Monroe County, City of Toledo, Ottawa County, Wood County, City of Livonia, Oakland County, Fulton County, Erie County, Livingston County, Henry County, and Seneca County) provided their all-hazard emergency plans and/or evacuation plans.

⁵⁵ Emergency Operations Plan mentioned the Fermi Plant but there was no specific plan. County wrote: "Seneca County’s planning for the Fermi Atomic Power Plant would be included in our Emergency Operations Plan (attached) either named or as a general item."

⁵⁶ The following cities/counties provided response: San Luis Obispo County, City of Atascadero, Santa Barbara County, City of Santa Maria, City of Paso Robles, Monterey County and Kern County.

⁵⁷ See n. 35, *supra*.

Request 3: None of the jurisdictions provided emergency plans specific to incidents at the Fermi Plant.

Request 4: None of the jurisdictions provided any documents on shadow evacuations, claiming that either no such documents exist or are in its possession, or not providing the documents for another specified reason. This is unsettling as unplanned shadow evacuations could hinder planned evacuations of residents and put them at significant risk. The GAO report discussed at length the shadow evacuation issue as cited earlier in this report.

Jurisdictions Located Between the 10-Mile and 50-Mile Radius: None Provided a Shadow Evacuation Plan

Of the twelve jurisdictions in Michigan (Lenawee County, Washtenaw County, City of Detroit, Wayne County, City of Dearborn, City of Livonia, City of Ann Arbor, Oakland County, Macomb County, Warren County, Livingston County, and Sterling Heights) and nine jurisdictions in Ohio (Lucas County, City of Toledo, Ottawa County, Wood County, Sandusky County, Fulton County, Erie County, Henry County, and Seneca County) that lie within the 10-mile to 50-mile geographic area surrounding the Fermi Plant, none provided documents for all four of DAP's information requests.

Twenty out of the twenty-one jurisdictions within the 10-mile to 50-mile geographic area surrounding the Fermi Plant provided some type of response.

Request 1: Only one jurisdiction beyond the 10-mile emergency planning zone (Wayne County, MI) indicated that it provided its residents with educational materials and/or plans regarding how to respond to a radiological incident at the Fermi Plant. Nineteen jurisdictions (Lenawee County, MI; Lucas County, OH; Washtenaw County, MI; City of Toledo, OH; City of Detroit, MI; City of Dearborn, MI; Ottawa County, OH; Wood County, OH; City of Livonia, MI; Sandusky County, OH; Oakland County, MI; Macomb County, MI; Warren County, MI; Fulton County, OH; Erie County, OH; Livingston County, MI; Sterling Heights, MI; Henry County, OH; and Seneca County, OH) stated that no such documents exist or are in its possession. One additional jurisdiction (City of Ann Arbor, MI) claimed an exemption but still provided non-responsive documents.

Request 2: Nine jurisdictions (City of Toledo, OH; Ottawa County, OH; Wood County, OH; City of Livonia, MI; Oakland County, MI; Fulton County, OH; Livingston County, MI; Henry County, OH; and Seneca County, OH) provided their all-hazard emergency plans and/or evacuation plans. However, Henry County and Fulton County only shared the exhibits of their evacuation plans and not their full plans. More than half of the jurisdictions (twelve out of twenty-one) located between 10 to 50 miles from the Fermi Plant failed to share all-hazard emergency plans.

Request 3: None of the twenty-one jurisdictions within the 10-mile and 50-mile emergency planning zone submitted responsive radiological information specific to the Fermi Plant. Only two jurisdictions (Henry County and Fulton County, OH) submitted responsive radiological information that mentioned the Fermi Plant. Most responses claimed that no information exist or are in the jurisdiction's possession. Lastly, two jurisdictions (City of Ann Arbor and Wayne County, MI) claimed exemptions.

Request 4: None of the jurisdictions between 10 and 50 miles from the Fermi Plant provided any documents on shadow evacuations, the majority claiming either that no such documents exist or are in its possession, or not providing the documents for another specified reason.

As the GAO pointed out in its previously referenced report:

Without estimates of evacuation times based on more solid understanding of public awareness, licensees and NRC and FEMA cannot be confident about the reliability of their estimates. If shadow evacuations are not correctly estimated, planning for a radiological emergency may not sufficiently consider the impact of the public outside the emergency planning zone.⁵⁸

Consequently, real gaps in emergency planning may occur without valid shadow evacuation estimates.⁵⁹

Conclusion: Public Education and Shadow Evacuation Planning are Inadequate within the 50-mile radius of the Enrico Fermi Nuclear Generating Station

Michigan and Ohio should not wait for the federal government to act. The states, counties, and cities within 50 miles of the Fermi Plant can and should voluntarily plan for emergencies beyond what is mandated by the federal government.

DAP agrees with the GAO Report's conclusion that further study is required to understand the level of public knowledge and the likely public reaction to a nuclear plant emergency, especially beyond the current 10-mile emergency planning zone.

The NRC only mandates an emergency planning zone of 10-miles for the areas surrounding the Fermi Plant. In contrast, the NRC's public guidance for the actual major nuclear plant disaster at the Fukushima Dai-ichi nuclear power plant recommended that U.S. citizens evacuate if they were located within 50 miles of the damaged Japanese nuclear plant. The NRC and FEMA have not satisfactorily reconciled this disparity between current planning and real-world guidance.⁶⁰

Days after the Fukushima Dai-ichi incident when Americans were encouraged to evacuate 50 miles away from the troubled plant, the Director of Emergency Planning at Entergy Energy (owner of Indian Point Energy Center) expressed that neither the company nor the NRC had sufficient information to draw up plans to evacuate New York City⁶¹ (located 38 miles from the Indian Point Energy Center) which has a population of 8,336,697 people.⁶²

⁵⁸ See NRC, *Criteria for Development of Evacuation Time Estimate Studies*, NUREG/CR-7002 (Albuquerque, New Mexico: November 2011) at 26 (available at <http://pbadupws.nrc.gov/docs/ML1130/ML113010515.pdf>).

⁵⁹ *Id.*

⁶⁰ NRC recently has stated that it "plans long-term action involving [emergency planning zones]" that will rely on a forthcoming Probabilistic Risk Assessment, the United Nations Scientific Committee on the Effects of Atomic Radiation's forthcoming report assessing radiation doses and associated effects on health and the environment, and from Fukushima Prefecture's Health Management Survey and that it will commence rulemaking efforts to make changes if those research efforts warrant changes. See Petition for Rulemaking; denial, 79 FR 19501, 19504 (Apr. 9, 2014).

⁶¹ See "Operators of Indian Point Say Changes are Likely" at <http://www.nytimes.com/2011/03/22/nyregion/22indian.html? r=0>.

⁶² Most recent estimate by U.S. Census Bureau as of June 2014. See <http://quickfacts.census.gov>.

Shadow evacuations from populated areas beyond the current 10-mile emergency planning zones could result from a public informed and influenced by readily-available guidance even if local authorities instruct certain members of the public that no evacuation is necessary from their location.

Members of an uninformed public, who have not received the annual emergency preparedness information, likely will turn to other convenient sources of information in order to respond to an actual emergency. A search of the internet easily turns up several recommendations and suggestions for evacuation to points more than 50 miles away from a stricken nuclear plant, including the NRC's own press release about Fukushima Dai-ichi. In addition, other credible organizations such as Physicians for Social Responsibility and the Smithsonian Institution have websites discussing 50-mile evacuations.⁶³ Also, reliable, well-known media sources reiterate the NRC's 2011 Fukushima Dai-ichi evacuation recommendation and display maps showing the 50-mile radius for every U.S. nuclear plant.⁶⁴ This readily available, web-based information is a likely source to which the public will turn for guidance, especially in a moment of crisis and in the absence of other information from state and local governments.

State and local authorities should not wait for the imposition of federal regulatory mandates in order to implement this planning into state and local preparedness efforts.

In light of its findings, DAP believes that planning and dissemination of information to increase public awareness of the potential for radiological emergencies beyond the current 10-mile emergency planning zones is warranted. At a minimum, emergency planning authorities from jurisdictions beyond the 10-mile mandatory planning zones should provide better emergency response guidance to the public, conduct shadow evacuation studies and plan accordingly, even if the federal government does not require it.

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Upon request, DAP will provide copies of correspondence with local governments in response to its information requests. A high-level index of the documents received from the survey effort is attached to this report in Appendix A.

⁶³ See <http://www.psr.org/resources/evacuation-zone-nuclear-reactors.html> and <http://www.smithsonianmag.com/science-nature/do-you-live-within-50-miles-nuclear-power-plant-180950072/?no-ist>.

⁶⁴ See <http://www.wsj.com/articles/SB10001424052748703362904576219031025249872>.

Appendix A

Index of Documents Received From Local Emergency Planning Authorities within 50 Miles of Enrico Fermi Nuclear Generating Station

State	Local Jurisdiction	Documents
Michigan	City of Ann Arbor	<input type="checkbox"/> Communication from Jacqueline Beaudry, City Clerk (August 2015); <input type="checkbox"/> Hazard Mitigation Plan (September 2012); <input type="checkbox"/> http://www.a2gov.org/departments/emergency-management/Pages/Home.aspx .
	City of Dearborn	<input type="checkbox"/> None
	City of Detroit	<input type="checkbox"/> None
	City of Livonia	<input type="checkbox"/> Communication from Michael E. Fisher, Chief Assistant City Attorney (August 2015); <input type="checkbox"/> Emergency Operations Plan (January 2013).
	Lenawee County	<input type="checkbox"/> None
	Livingston County	<input type="checkbox"/> Livingston County Emergency Operations Plan (2014).
	Macomb County	<input type="checkbox"/> Letter from John A. Schapka, Corporation Counsel (August 5, 2015).
	Monroe County	<input type="checkbox"/> Communication from Philip D. Goldsmith, legal counsel for Monroe County (August 2015); <input type="checkbox"/> Information Package (undated).
	Oakland County	<input type="checkbox"/> Communication from Theodore H. Quisenberry, Manager of Homeland Security Division (August 2015). <input type="checkbox"/> www.oakgov.com/homelandsecurity .

	Sterling Heights	<input type="checkbox"/> Letter from Captain John Berg, Sterling Heights Police Department (August 2015).
	Warren County	<input type="checkbox"/> None
	Washtenaw County	<input type="checkbox"/> Environmental Response Procedure (August 2015); <input type="checkbox"/> Emergency Action Guidelines of Washtenaw County; <input type="checkbox"/> Community Emergency Preparedness Workbook & Guidelines.
	Wayne County	<input type="checkbox"/> Communication from Lisa DiRado, FOIA Officer (August 2015); <input type="checkbox"/> RERP EP Brochure (undated); <input type="checkbox"/> Potassium Iodide Fact Sheet (2015).
Ohio	City of Toledo	<input type="checkbox"/> Emergency Operations Plan (March 2011).
	Erie County	<input type="checkbox"/> None
	Fulton County	<input type="checkbox"/> Emergency Operations Plan Annex D: Emergency Public Information (March 2016); <input type="checkbox"/> Emergency Operations Plan Annex J: population Protective Actions (March 2016); <input type="checkbox"/> Emergency Operations Plan Annex K: Shelter and Mass Care (March 2016).
	Henry County	<input type="checkbox"/> Emergency Operations Plan Annex C: Notification and Warning (March 2016); <input type="checkbox"/> Emergency Operations Plan Annex D: Emergency Public Information (March 2016); <input type="checkbox"/> Emergency Operations Plan Annex J: Population Protective Actions (February 2012).
	Lucas County	<input type="checkbox"/> Emergency Operations Plan (March 2011).
	Ottawa County	<input type="checkbox"/> Communication from Fred Petersen, Director of Ottawa County Emergency Management Agency (August 2015); <input type="checkbox"/> Emergency Operations Plan (February 2014).

	Sandusky County	<input type="checkbox"/> None
	Seneca County	<input type="checkbox"/> Emergency Operations Plan (January 2015).
	Wood County	<input type="checkbox"/> Wood County All Hazards Plan; <ul style="list-style-type: none"> <input type="checkbox"/> Basic Plan, Annex A-R, Appendix 1-10, (and updated version of Appendix 5); <input type="checkbox"/> Dangerous Wild Animal Response Plan.

Appendix B: Disaster Accountability Project History and Projects

2007

- DAP incorporated and filed for tax-exempt status.
- Compiled hundreds of post-Katrina policy recommendations in what later became a “Disaster Policy Wiki” to track the implementation status of “lessons learned.”

2008

- Successfully campaigned to compel FEMA to comply with federal law and elevate the position of FEMA Disability Coordinator.
- DAP's hotline served as a real-time listening device during Hurricane Ike and assisted numerous callers and countless others by directing details of gaps in critical services to responsible government agencies and nonprofit organizations.

2009

- Investigated and authored a report on the accessibility and modernity of emergency plans in twenty-two hurricane-vulnerable Louisiana parishes; this report prompted many parishes to update and improve public access to their emergency plans.

2010

- DAP's reports after the 2010 Haiti earthquake improved the transparency of over 1.2 billion U.S. Dollars (USD) and offered a first comprehensive look at how organizations were operating in Haiti at six months and one year after the earthquake.

2011

- DAP's report released in Port au Prince, Haiti on the first anniversary of the Haiti earthquake generated global media coverage.
- DAP returned to Haiti to conduct site visits of disaster relief centers in coordination with Haiti Aid Watchdog, a Haitian civil society organization.

2012

- DAP collected data from organizations immediately following the response to Superstorm Sandy in an effort to hold organizations accountable for the donations they raised.

2013

- DAP's successful complaint to the New York Attorney General after Superstorm Sandy compelled the American Red Cross to release 4 million USD to families that lost homes and were impacted by gross mismanagement of an American Red Cross recovery program.

In addition to the complaint, DAP engaged a bipartisan group of members of Congress, attracted media attention in the Wall Street Journal, USA Today, Al Jazeera America, among others, and directly engaged the donors behind nearly 100 million USD in American Red Cross donations.

2014

- DAP completed two investigations on the state-level standards of care for public health emergencies in Florida and Louisiana resulting in a commitment by Louisiana public health officials to make specific improvements to state public health emergency planning.
- DAP continued advocacy to improve accountability of major disaster relief organizations following Superstorm Sandy and expanded its oversight to include organizations operating after other disasters, such as the Joplin, Missouri tornado, West, Texas explosion, and Colorado floods.
- DAP partnered with the Center for High Impact Philanthropy to conduct an independent review to identify possible philanthropic and 'impact investment' solutions to address New Jersey's housing crisis following Superstorm Sandy for The Jon Bon Jovi Soul Foundation.

2015

- DAP released five reports detailing a lack of emergency and evacuation planning within 50 miles of five U.S. nuclear power plants in New York, New Jersey, Virginia, Florida, and Illinois, including cities and counties in Connecticut, Pennsylvania, Delaware, Maryland, North Carolina, and Indiana.
- DAP's work was cited numerous times in a GAO report on American Red Cross transparency and oversight, resulting in the introduction of the "American Red Cross Sunshine Act," federal legislation to improve oversight of the organization.
- DAP released a major report one month after the Nepal earthquake assessing consistency and transparency of organizations' online solicitations and surveyed nearly 100 organizations to assess the extent of their current activities and plans for future involvement in Nepal.