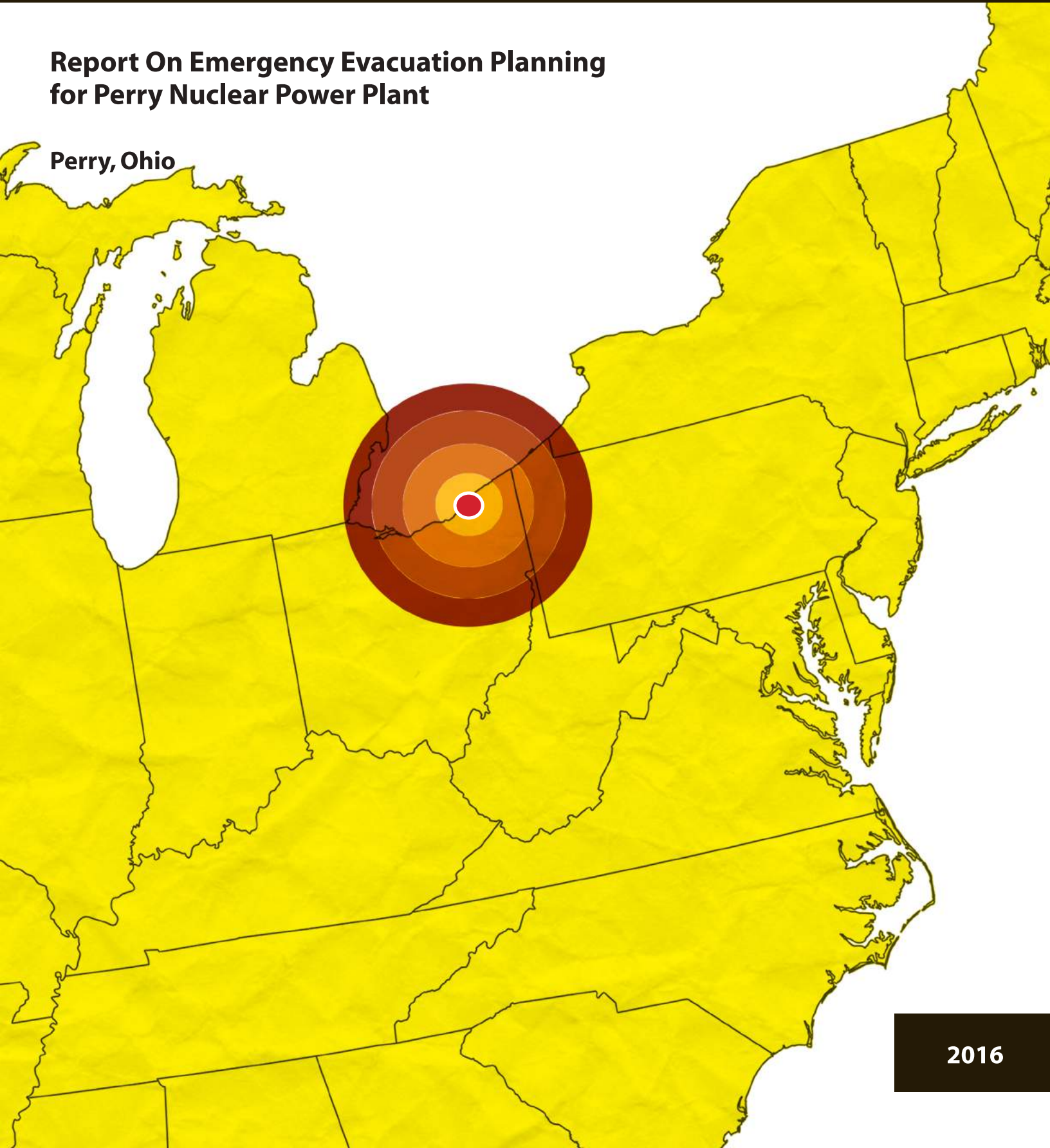


# Disaster Accountability Project



## Report On Emergency Evacuation Planning for Perry Nuclear Power Plant

Perry, Ohio



2016

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## **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 that are 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 Alison Shih, Jana Wilson, Roxanne Lin, Lisa Charles, Nicholas Boland-Cairney, Veronica Bailey, Russell Rollow, Arsalan Kashfi, Karishma Dudani, Nicole Corteling, Chinasa Udeinya, 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*.<sup>1</sup> 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.<sup>2</sup> As a consequence of radiation release, Japanese authorities evacuated nearly 150,000 people located within 19 miles of the stricken plant.<sup>3</sup>

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.<sup>4</sup> 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.**”<sup>5</sup> The NRC recommendation was also broadcasted to U.S. citizens in Japan via a travel warning on the U.S. Embassy website in Japan.<sup>6</sup> 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.<sup>7</sup> NRC regulations have established 10-mile emergency planning zones around domestic nuclear power plants.<sup>8</sup> 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.<sup>9</sup> Local and state authorities must also provide information on radiation and protective actions to residents of the 10-mile zone on an annual basis.<sup>10</sup>

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

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<sup>1</sup> 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>).

<sup>2</sup> *Id.* at 1.

<sup>3</sup> *Id.*

<sup>4</sup> 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>).

<sup>5</sup> *Id.* (emphasis added).

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

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

<sup>8</sup> See 10 CFR 50.47(c)(2).

<sup>9</sup> United States Government Accountability Office, *supra* note 1, at 5.

<sup>10</sup> See 10 CFR 50 Appendix E Section IV.D.2.

<sup>11</sup> 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.<sup>12</sup> 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.<sup>13</sup> 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."<sup>14</sup>

In support of maintaining the current 10-mile planning zone standard, NRC stated 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.<sup>15</sup> Further, the NRC emphasized that "[s]tate and local authorities have a **robust capability** to effectively evacuate the public in response to life-threatening emergencies."<sup>16</sup> DAP questions the veracity of NRC's assertions regarding preparedness adequacy and effectiveness, especially given the current lack of planning outside of 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.<sup>17</sup> 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 on the public outside the emergency planning zone.**<sup>18</sup>

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<sup>12</sup> *Id.*; see also 44 FR 61123, Oct. 23, 1979.

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

<sup>14</sup> See *id.* at 19506-07.

<sup>15</sup> *Id.*

<sup>16</sup> *Id.* at 19505 (emphasis added).

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

<sup>18</sup> *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 Perry Nuclear Power Plant (hereinafter "Perry Plant"), a nuclear power station located approximately 35 miles from Cleveland, OH, the 59th largest metropolitan area in the United States.<sup>19</sup>

## Perry Nuclear Power Plant and the Population within 50 Miles

The Perry Plant is located on Lake Erie in North Perry, OH, approximately 35 miles northeast of Cleveland. The plant is a General Electric BWR-6 boiling water reactor design with a current core power level of 3,758 megawatts.<sup>20</sup> FirstEnergy Nuclear Operating Company (FENOC), a subsidiary of FirstEnergy Corp., operates the Perry Plant that began operation in 1987 and its current license will expire in 2026.<sup>21</sup> The Perry Plant was originally designated as a two-unit installation, but construction of the second unit was formally cancelled in 1994. 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.<sup>22</sup>

FENOC's ETE report filed with the NRC contemplates shadow evacuations from within the 10-mile emergency planning zone as well as from 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 Perry Plant.<sup>23</sup>

FENOC's report estimates that 60,979 people live within the shadow zone and assumes that 20% of those people would evacuate in a radiological emergency.<sup>24</sup> 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 2,398,000 people.<sup>25</sup>

Figures 1 and 2 show the stark geographic variation between the established 10-mile emergency planning zone for the Perry Plant and a larger 50-mile geographic radius, which corresponds to the recommended NRC evacuation area for the Fukushima Dai-ichi plant in 2011.<sup>26</sup>

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

<sup>20</sup> See [https://www.firstenergycorp.com/content/fecorp/about/generation\\_system/FENOC/perry.html](https://www.firstenergycorp.com/content/fecorp/about/generation_system/FENOC/perry.html).

<sup>21</sup> *Id.*

<sup>22</sup> See 10 CFR 50 Appendix E Section IV.5.

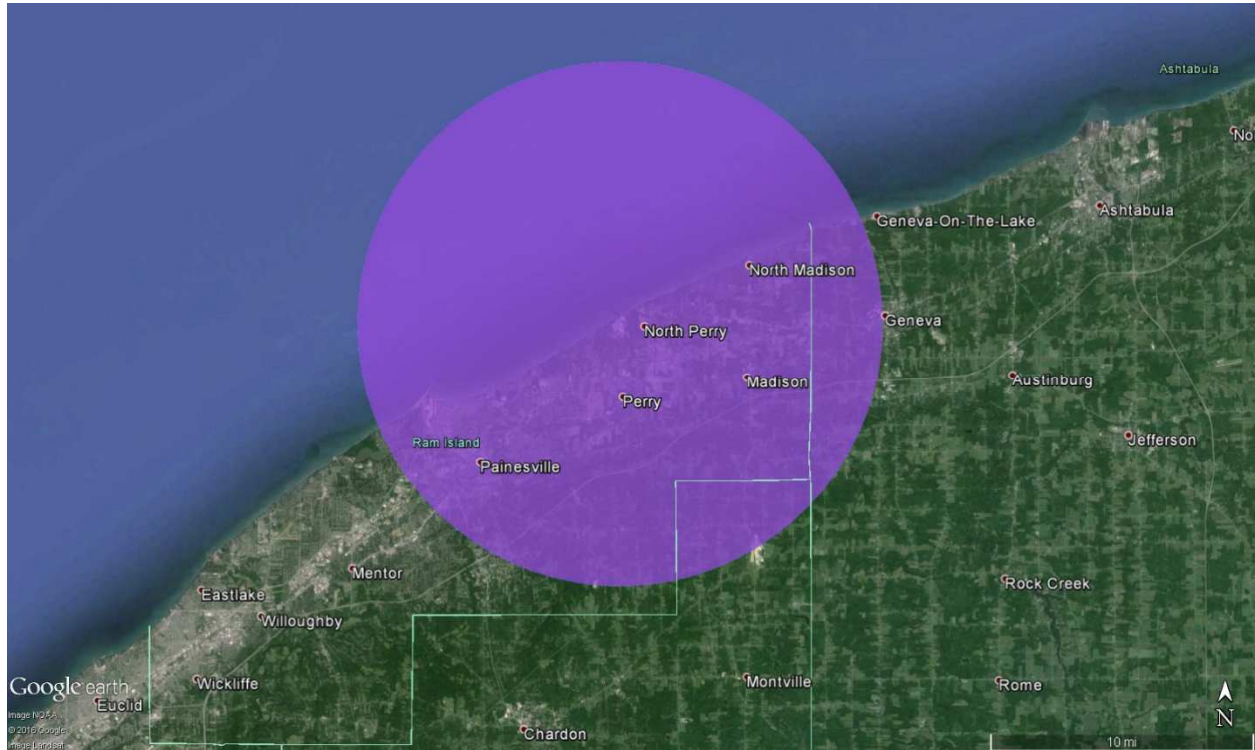
<sup>23</sup> See FENOC's evacuation plan at <http://pbadupws.nrc.gov/docs/ML1300/ML13007A115.pdf>.

<sup>24</sup> *Id.* at p. 55.

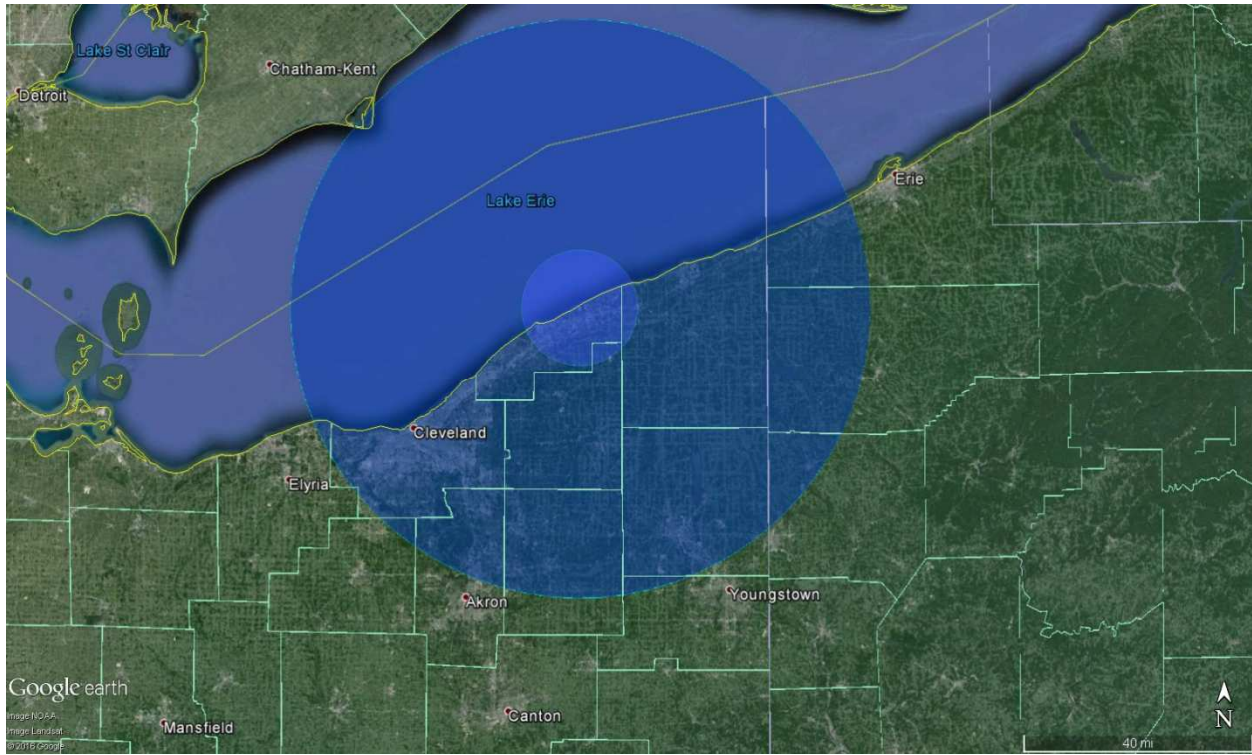
<sup>25</sup> See Natural Resources Defense Council at <http://www.nrdc.org/nuclear/fallout/>.

<sup>26</sup> 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 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 Perry 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. 1 - 10-mile radius from the Perry Nuclear Power Plant - Emergency Planning Zone (shaded area)**



**Fig. 2 - 50-mile radius from the Perry Nuclear Power Plant (shaded area).**



The 10-mile emergency planning zone encompasses Lake County, Ashtabula County and Geauga County in Ohio, whereas the 50-mile radius includes six jurisdictions in Ohio and three jurisdictions in Pennsylvania. Further, according to the Natural Resources Defense Council's 10-mile Evacuation Zone, the 2010 population total was 102,000 people, and for the 50-mile Potential Contamination Zone, the 2010 population total was 2,398,000 people.<sup>27</sup>

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



## **DAP Survey of Jurisdictions within 50 miles of the Perry Nuclear Power Plant**

Between September 2015 and January 2016, DAP sent 12 information requests to local jurisdictions<sup>28</sup> within the 50-mile radius of the Perry 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 Perry 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 Perry Plant; and
4. All studies conducted on the likely rate of “shadow evacuations” related to the Perry Plant, which are defined 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.

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<sup>28</sup> DAP canvassed the entire geographic area within a 50-mile radius around the Perry 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 Perry Plant (miles) <sup>29</sup>	Population <sup>30</sup>	Req. 1	Req. 2	Req. 3	Req. 4
OH	Lake County	0	229,528	P	P	P	N
OH	Geauga County	6	93,840	P	P	P	P
OH	Ashtabula County	7	100,298	P	NR <sup>31</sup>	P	N <sup>32</sup>
OH	Cuyahoga County	21	1,266,049	P	E	E	E
OH	Trumbull County	22	207,403	NR	NR	N <sup>33</sup>	NR
OH	City of Cleveland	25	389,521	NR	NR	NR	NR
OH	Portage County	31	163,851	N <sup>34</sup>	P	N <sup>35</sup>	N

<sup>29</sup> DAP used a web-based tool to find these distances. See <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>.

<sup>30</sup> Most recent estimate by U.S. Census Bureau as of June 2014. See <http://quickfacts.census.gov/qfd/states/12/12011.html>.

<sup>31</sup> Did not share an all-hazard emergency operation plan and/or evacuation plan.

<sup>32</sup> “Item #4 of your request is produced by the Perry Plant and your request for that document should be directed to them.”

<sup>33</sup> County shared its Annex M-Radiological Protection that does not mention the Perry Plant.

<sup>34</sup> “There is no requirement for Portage County to prepare for a nuclear incident originating at Perry Nuclear Plant and consequentially Portage County EMA [Emergency Management Agency] has no related emergency planning documents pursuant to your request. Portage County also relies on the guidance of the State of Ohio’s emergency plans and their direction.”

<sup>35</sup> “There is no requirement for Portage County to prepare for a nuclear incident originating at Perry Nuclear Plant and consequentially Portage County EMA has no related emergency planning documents pursuant to your request. Portage County also relies on the guidance of the State of Ohio’s emergency plans and their direction.”

PA	Erie County	32	76,390	N	P	N <sup>36</sup>	N
PA	Crawford County	32	42,874	N	P	N	N
OH	Summit County	33	541,106	N <sup>37</sup>	P	N <sup>38</sup>	N <sup>39</sup>
OH	City of Warren	39	40,633	N <sup>40</sup>	P <sup>41</sup>	N <sup>42</sup>	N
PA	Mercer County	39	40,867	NR	NR	NR	NR

**Summary of Responses: Overall**

- 10 out of 12 (83%) of the jurisdictions provided responses to the information requests.
- 2 out of 12 (17%) of the jurisdictions (City of Cleveland and Mercer County) did not respond at all.
- All 3 jurisdictions within 10 miles of the Perry Plant and 1 out of 9 jurisdictions between 10-50 miles of the Perry Plant reported providing educational materials or plans to residents regarding how to respond to a radiological incident at that plant.
- 7 out of 12 (58%) of the jurisdictions provided all-hazard emergency plans and/or evacuation plans.
- 3 out of 12 (25%) of the jurisdictions provided emergency plans specific to radiological incidents at the Perry Plant.
- Only 1 jurisdiction (Geauga County) furnished a shadow evacuation plan or study.

**Summary of Responses: Within the 10-mile zone**

- All 3 jurisdictions within 10 miles of the plant provided emergency plans specific to radiological incidents at the Perry Plant.

**Summary of Responses: Outside the 10-mile zone**

- None of the 9 jurisdictions outside the 10-mile zone shared emergency plans specific to radiological incidents at the Perry Plant.

**Jurisdictions Located within 10 Miles: One Provided a Shadow Evacuation Plan**

None of the three jurisdictions in Ohio (Lake County, Ashtabula County, and Geauga County) that constitute the 10-mile emergency planning zone provided shadow evacuation plans or studies.

<sup>36</sup> Shared the state’s ingestion plan and Ashtabula County’s radiological plan.

<sup>37</sup> County Representative stated on 1/11/16 call with DAP that because the Perry Nuclear Plant was not located in the county, the county did not have information about it and then could not confirm whether or not county had information available. The representative referred DAP to their website. No information found on the site.

<sup>38</sup> County Representative stated on 1/11/16 call that because the Perry Nuclear Plant was not located in the county, the county did not have information about it. The representative hung up on conversation when asked whether county had a radiological plan that mentioned the Perry Plant.

<sup>39</sup> Referred to website. No information found.

<sup>40</sup> “My information indicates that the Perry Plant is 52 miles and Beaver Valley is 62 miles.”

<sup>41</sup> Sent Appendix 1 to Annex J (Evacuation): Evacuation In Response to Threat of Nuclear Attack), Revised 2003.

<sup>42</sup> “There are no plans specific to Perry nuclear plant. Our plan is general to radiological protection monitoring.”

Request 1: All three jurisdictions provided educational materials and/or plans as mandated by the NRC in the Code of Federal Regulations.

Request 2: Two jurisdictions (Lake County and Geauga County) provided their all-hazard emergency plans and/or evacuation plans. Ashtabula County failed to provide any documents in response to this request.

Request 3: All three jurisdictions provided emergency plans specific to incidents at the Perry Plant.

Request 4: Only one of the 10-mile emergency zone jurisdictions (Gauga County) provided any documents on shadow evacuations. The other two jurisdictions claimed that no such documents exist or are in its possession. Ashtabula County suggested contacting the Perry Plant for the shadow evacuation study since DAP's information request was about that plant.

It is unsettling that two of the 10-mile emergency zone jurisdictions had no documents on shadow evacuations because 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 nine jurisdictions within the 10-mile to 50-mile geographic area surrounding the Perry Plant (City of Cleveland, City of Warren, Cuyahoga County, Trumbull County, Portage County, and Summit County in Ohio; Erie County, Crawford County, and Mercer County in Pennsylvania), seven provided some type of response.

Request 1: One jurisdiction beyond the 10-mile emergency planning zone indicated that it provided its residents with educational materials and/or plans regarding how to respond to a radiological incident at the Perry Plant. Five jurisdictions stated that no such documents exist or are in its possession and three failed to provide these documents or a written response to the request.

Request 2: Five jurisdictions (City of Warren, Portage County, Summit County, Erie County, and Crawford County) furnished plans while the other four jurisdictions located between 10 to 50 miles from the Perry Plant failed to share all-hazard emergency plans.

Cuyahoga County responded that these documents were exempt from disclosure. The three other jurisdictions (Trumbull County, Mercer County and City of Cleveland) did not provide documents or written responses to the request.

Request 3: None of the jurisdictions between the 10-mile and 50-mile emergency planning zone submitted responsive radiological information. The responses fell into one of the following three categories: jurisdictions claiming that no information exists or is in its possession (City of Warren, Trumbull County, Portage County, Summit County, Erie County, and Crawford County); counties not providing documents or written responses to the request (City of Cleveland and Mercer County); or county claiming an exemption (Cuyahoga County).

Request 4: None of the jurisdictions between 10 and 50 miles from the Perry Plant provided any documents on shadow evacuations, the majority either claiming that no such documents exist or are in

its possession, or not providing the documents or a written response. Again, Cuyahoga County claimed an exemption.

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.<sup>43</sup>

Consequently, real gaps in emergency planning may occur without valid shadow evacuation estimates.<sup>44</sup>

### **Conclusion: Public Education and Shadow Evacuation Planning are Inadequate within the 50-mile radius of the Perry Nuclear Power Plant**

**Ohio and Pennsylvania should not wait for the federal government to act. The states, counties, and cities within 50 miles of the Perry 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 Perry 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.<sup>45</sup>

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 City<sup>46</sup> (located 38 miles from the Indian Point Energy Center) which has a population of 8,336,697 people.<sup>47</sup>

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<sup>43</sup> See NRC, *Criteria for Development of Evacuation Time Estimate Studies*, NUREG/CR-7002 (Albuquerque, New Mexico: Nov. 2011) at 26 (available at <http://pbadupws.nrc.gov/docs/ML1130/ML113010515.pdf>).

<sup>44</sup> *Id.*

<sup>45</sup> NRC recently 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).

<sup>46</sup> See "Operators of Indian Point Say Changes are Likely" at <http://www.nytimes.com/2011/03/22/nyregion/22indian.html? r=0>.

<sup>47</sup> 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.<sup>48</sup> 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.<sup>49</sup> 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.

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<sup>48</sup> 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>.

<sup>49</sup> See <http://www.wsj.com/articles/SB10001424052748703362904576219031025249872>.

## Appendix A

### Index of Documents Received From Local Emergency Planning Authorities within 50 Miles of the Perry Nuclear Power Plant

State	Local Jurisdiction	Documents
Ohio	Ashtabula County	<input type="checkbox"/> Communication from Mike Fitchet, Director of Ashtabula County Emergency Management Agency (October 2015); <input type="checkbox"/> Radiological Emergency Response Plan (January 2015).
	City of Cleveland	<input type="checkbox"/> None
	City of Warren	<input type="checkbox"/> Appendix 1 to Annex J (Evacuation): Evacuation in Response to Threat of Nuclear Attack (October 2003).
	Cuyahoga County	<input type="checkbox"/> Evacuation Fact Sheet (undated); <input type="checkbox"/> Family Emergency Plan (undated); <input type="checkbox"/> Home Preparedness Fact Sheet (undated); <input type="checkbox"/> ReadyNotify Fact Sheet (undated); <input type="checkbox"/> Shelter-in-Place Fact Sheet (undated); <input type="checkbox"/> Nuclear Incident Fact Sheet (undated).
	Geauga County	<input type="checkbox"/> Communication from Dale B. Wedge, Director of Geauga County Department of Emergency Services (October 2015); <input type="checkbox"/> Radiological Emergency Response Plan (January 2015); <input type="checkbox"/> Emergency Operations Plan (2013); <input type="checkbox"/> Emergency Operations Plan Annex A - G (2013); <input type="checkbox"/> Emergency Operations Plan Annex H - J (2013); <input type="checkbox"/> Emergency Operations Plan Annex K - O (2013); <input type="checkbox"/> Emergency Operations Plan Annex R: Companion Animal Response (2013). <input type="checkbox"/> Development of Evacuation Time Estimates, Perry Nuclear Power Plant, KLD Engineering (2012). <ul style="list-style-type: none"> <li><input type="checkbox"/> 2013 Population Update Analysis</li> <li><input type="checkbox"/> 2014 Population Update Analysis</li> <li><input type="checkbox"/> 2015 Population Update Analysis (Draft and Final versions)</li> </ul>
	Lake County	<input type="checkbox"/> Emergency Operations Plan: Basic Plan (undated); <input type="checkbox"/> Radiological Emergency Response Plan (January 2014); <input type="checkbox"/> EPI Emergency Preparedness Information (August

		<p>2015);</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Communication from Larry Greene, Director of Lake County Emergency Management Agency (October 2015).</li> </ul>
	Portage County	<ul style="list-style-type: none"> <li><input type="checkbox"/> ESF 15: Emergency Public Information</li> <li><input type="checkbox"/> Portage County Emergency Operations Base Plan</li> <li><input type="checkbox"/> Chemical Emergency Response and Preparedness Plan, Local Emergency Planning Committee (2015).</li> </ul>
	Summit County	<ul style="list-style-type: none"> <li><input type="checkbox"/> Summit County Emergency Operations Plan <a href="https://co.summitoh.net/index.php/emergency-operations-plan">https://co.summitoh.net/index.php/emergency-operations-plan</a></li> </ul>
	Trumbull County	<ul style="list-style-type: none"> <li><input type="checkbox"/> Communication from Linda Beil, Director of Trumbull County Office of Homeland Security and Emergency Management (October 2015);</li> <li><input type="checkbox"/> Annex M: Radiological Protection (May 2015).</li> </ul>
Pennsylvania	Crawford County	<ul style="list-style-type: none"> <li><input type="checkbox"/> Emergency Operations Plan Section I: Basic Plan (October 2014);</li> <li><input type="checkbox"/> Perry Nuclear Power Plant 2015 Population Update Analysis (September 2015).</li> </ul>
	Erie County	<ul style="list-style-type: none"> <li><input type="checkbox"/> Erie County Hazard Mitigation Plan</li> <li><input type="checkbox"/> Erie County Emergency Operations Plan (EOP Basic Plan)</li> <li><input type="checkbox"/> Appendix 7, Annex E - State Emergency Operations Plan</li> <li><input type="checkbox"/> Ashtabula County Ohio EMA, Radiological Emergency Response Plan</li> <li><input type="checkbox"/> Email dated 12/21/06 to PEMA regarding information request concerning ingestion pathway information for Perry Nuclear Power Plant.</li> </ul>
	Mercer County	<ul style="list-style-type: none"> <li><input type="checkbox"/> None</li> </ul>



## **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.