

Disaster Accountability Project



Report On Emergency Evacuation Planning for Palo Verde Nuclear Generating Station

Tonopah, Arizona

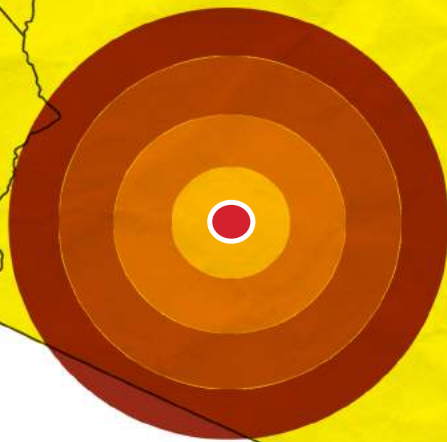


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About Disaster Accountability Project

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 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 Manuel Viedma, Gary Jenkins, Jana Wilson, Roxanne Lin, Lisa Charles, Veronica Bailey, Russell Rollow, Arsalan Kashfi, Karishma Dudani, Nicholas Boland - Cairney, Nicole Corteling, Esther Choi, Chinasa Udeinya, 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 Nuclear Information and Resource Service and its co-petitioners 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 governments have a **robust capability** 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 concluded 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 on 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.

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 Palo Verde Nuclear Generating Station (hereinafter "Palo Verde"), a nuclear power station located in Tonopah, Arizona, less than 50 miles from Phoenix, the 9th largest metropolitan area in the United States.¹⁹

Palo Verde Nuclear Generating Station and the Population within 50 Miles

Palo Verde consists of three pressurized water reactors each with a capacity of 1.24 gigawatts. It supplies power for Southern Arizona (including the Phoenix-Scottsdale and Tucson areas) and Southern California (including Los Angeles and San Diego).²⁰ It is owned by a consortium of energy companies including (in decreasing order of interest): Arizona Public Service (29%), El Paso Electric Co. (16%), Southern California Edison (16%), PNM Resources (10%), Southern California Public Power Authority (6%), and Los Angeles Dept. of Water and Power (6%). It is operated by Arizona Public Service. Every nuclear power plant operator is responsible for maintaining evacuation time estimate reports for NRC inspection and filing any updated reports with the NRC.²¹

The Arizona Public Service Evacuation Time Estimate (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 Palo Verde.²²

The Arizona Public Service report estimates that 24,000 people live within the shadow zone and assumes that 20% of those people would evacuate in a radiological emergency.²³ 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 2,212,000 people.²⁴

Figures 1 and 2 show the stark geographic variation between the established 10-mile emergency planning zone for Palo Verde and a larger 50-mile geographic radius which corresponds to the recommended NRC evacuation area for the Fukushima Dai-ichi plant in 2011.²⁵

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

²⁰ See https://en.wikipedia.org/wiki/Palo_Verde_Nuclear_Generating_Station (accessed Jan. 1, 2016).

²¹ See 10 CFR 50 Appendix E Section IV.5.

²² See <http://pbadupws.nrc.gov/docs/ML1235/ML12355A748.pdf>.

²³ *Id.*

²⁴ See Natural Resources Defense Council at <http://www.nrdc.org/nuclear/fallout/>.

²⁵ 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 Palo Verde 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 Palo Verde Nuclear Generating Station - Emergency Planning Zone (shaded area)

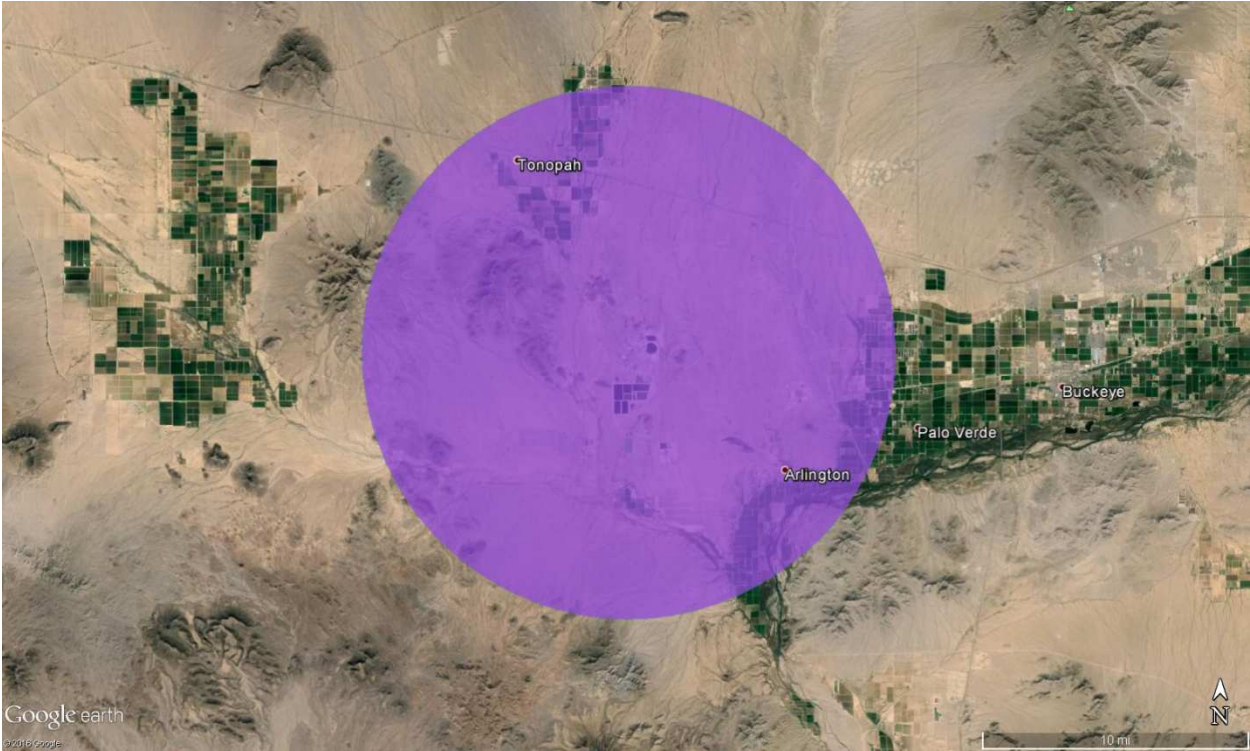
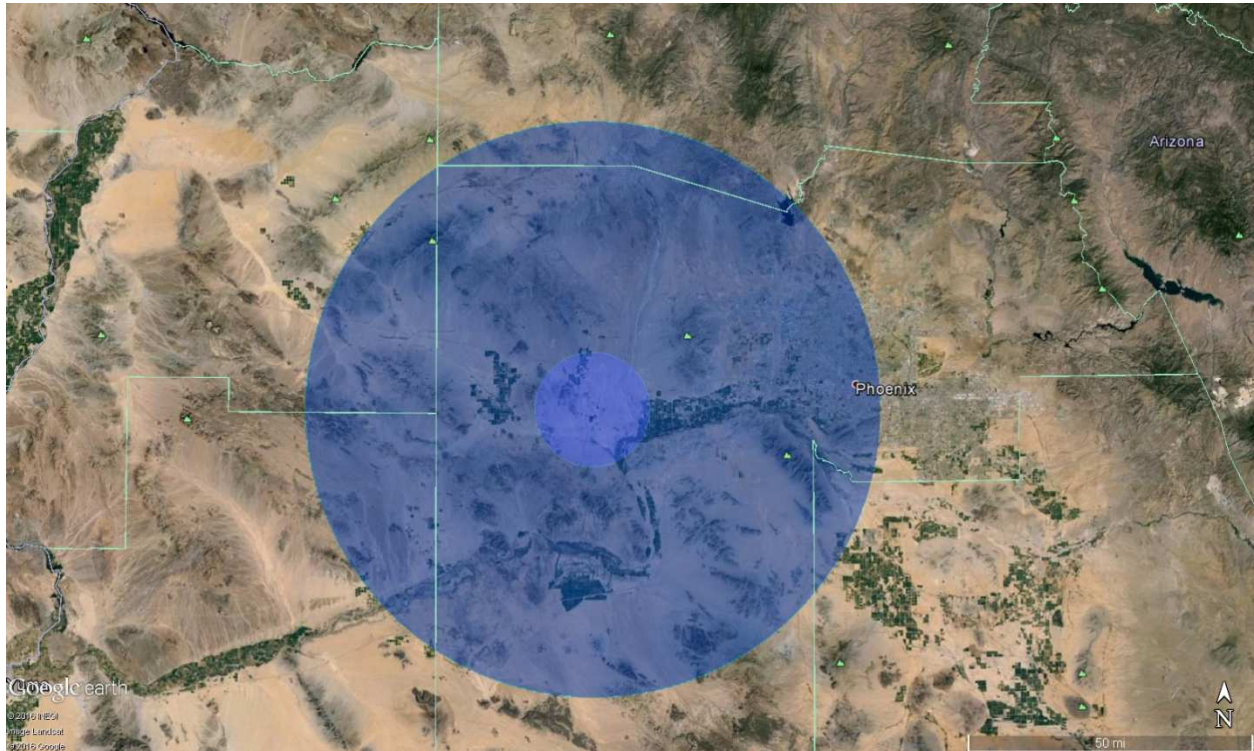


Fig. 2 - 50-mile radius from Palo Verde Nuclear Generating Station (shaded area).



Both the 10-mile emergency planning zone and the 50-mile radius are within Maricopa County in Arizona. Further, according to the Natural Resources Defense Council's 10-mile Evacuation Zone, the 2010 population total was 24,000 people and for the 50-mile Potential Contamination Zone, the 2010 population total was 2,212,000 people.²⁶

²⁶ See Natural Resources Defense Council at <http://www.nrdc.org/nuclear/fallout/>.

DAP Survey of Jurisdictions within 50 miles of Palo Verde Nuclear Generating Station

Between October 2015 and January 2016, DAP sent 4 information requests to local jurisdictions²⁷ within the 50-mile radius of Palo Verde seeking the following four categories of documents and information:

1. Educational materials or plans provided to residents up to 50 miles away from Palo Verde 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 Palo Verde; and
4. Any studies conducted on the likely rate of “shadow evacuations” related to Palo Verde, which are 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.

²⁷ DAP canvassed the entire geographic area within a 50-mile radius around Palo Verde 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 Palo Verde (miles) ²⁸	Population ²⁹	Req. 1	Req. 2	Req. 3	Req. 4
AZ	Maricopa County	0	3,940,612	N ³⁰	P	N ³¹	N ³²
AZ	La Paz County	27	20,294	NR	P	N ³³	NR
AZ	City of Phoenix	34	1,537,058	N	NR ³⁴	N ³⁵	N
AZ	Pinal County	40	387,020	N ³⁶	P	N ³⁷	N ³⁸

²⁸ DAP used a web-based tool to find these distances. See <http://www.daftlogic.com/projects-google-maps-distance-calculator.htm>.

²⁹ See most recent estimate by U.S. Census Bureau as of June 2014 at <http://quickfacts.census.gov/qfd/states/12/12011.html>

³⁰ "While this document is reviewed by offsite state and local agencies annual [sic] prior to production, it is owned by PVNGS [Palo Verde]. Accordingly, I’ve included the PVNGS liaison, Dave Crozier, on this correspondence, so that he may forward you an electronic version of this material."

³¹ "The Arizona Department of Emergency and Military Affairs (AzDEMA) is the lead agency on the Palo Verde Offsite Response Plan and our department would defer to that agency for this particular portion of the records requests" (Maricopa County DEM).

³² "I would have to refer you again to the plant liaison for any information related to that study and its component. We are very fortunate in that the 10-mile population totals 8,357 residents and is not more densely populated. In terms of the wider 50-mile, Maricopa County does not have a plan specifically related to shadow evacuations per se although they certainly are anticipated."

³³ "Although, our plan does not specifically reference the Palo Verde Nuclear Plant. We are part of their planning, training, and exercises. We will follow the Palo Verde Nuclear Plant Response Plan as well as the State's."

³⁴ "The regional Hazard Mitigation Plan resides at the Maricopa County Department of Emergency Management."

³⁵ "Staff with [the Phoenix] Fire Department have confirmed that they have nothing in their SOPs specific to Palo Verde Generation Station. Given its location, they suggested contacting Maricopa County Public Safety and Emergency Management agencies."

³⁶ "Any educational materials or plans provided to residents are those developed and distributed by either [Palo Verde] or Maricopa County Department of Emergency Management, with our county logo included, as appropriate. I would refer you to Dave Crozier, the [Palo Verde] Liaison from APS for further information on that. Our philosophy is that we are speaking as “one voice” so that the public and residents receive as clear and concise information and guidance as possible. That is why we do not create our own “product” in these regards."

³⁷ "As we are not in “ownership” of these plans, I would not feel comfortable to provide those but will refer you to Mr. Crozier and Mr. Bill Wolfe, program manager at Arizona Dept of Emergency & Military Affairs, for additional information or requests."

Summary of Responses: Overall

- 4 out of 4 (100%) of the jurisdictions provided responses to the information requests.
- No jurisdiction within 10 miles of Palo Verde and 0 out of 3 jurisdictions between 10-50 miles of Palo Verde reported providing educational materials or plans to residents regarding how to respond to a radiological incident at that plant.
- 3 out of 4 (75%) of the jurisdictions provided all-hazard emergency plans and/or evacuation plans.
- 0 out of 4 (0%) of the jurisdictions provided emergency plans specific to radiological incidents at Palo Verde.
- No jurisdiction furnished a shadow evacuation plan or study.

Summary of Responses: Within the 10-mile zone

- 0 jurisdiction within 10 miles of the plant shared emergency plans specific to radiological incidents at Palo Verde.

Summary of Responses: Outside the 10-mile zone

- 0 of the 3 jurisdictions outside the 10-mile zone provided emergency plans specific to radiological incidents at Palo Verde.

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

The only jurisdiction in Arizona (Maricopa County) that constitutes the 10-mile emergency planning zone did not provide documents for all four of DAP's information requests.

Request 1: Maricopa County failed to provide educational materials and/or plans as mandated by the NRC in the Code of Federal Regulations.

This is notable since the entire 10-mile radius lies within Maricopa County and the county is therefore legally mandated to provide residents with public information on radiation and protective actions annually.

Request 2: Maricopa County provided their all-hazard emergency plans and/or evacuation plans.

Request 3: Maricopa County did not provide emergency plans specific to radiological incidents at Palo Verde.

Request 4: Maricopa County did not provide documents on shadow evacuations.

It is unsettling that Maricopa County, the only jurisdiction within the 10-mile emergency zone, does not have any 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.

³⁸ "Pinal County Office of Emergency Management has not conducted any studies with relations to this issue. The Arizona Department of Transportation has, however, completed a draft evacuation [and] reception plan for state and federal highways. They may [have] supporting documentation or studies that you seek. Unfortunately, I do not have a valid point of contact for them at this time, however, Mr. Wolfe should be able to help you out."

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

Of the three jurisdictions within the 10-mile to 50-mile geographic area surrounding Palo Verde (La Paz County, City of Phoenix, and Pinal County), two provided some type of response.

Request 1: None of the three jurisdictions beyond the 10-mile emergency planning zone indicated that they provided residents with educational materials and/or plans regarding how to respond to a radiological incident at Palo Verde. La Paz County failed to provide documents or any written response to the request. The City of Phoenix stated that no such documents exist or are in its possession. Pinal County officials indicated that PVNGS and Maricopa County provided residents with such documents as appropriate.

Request 2: Two out of the three jurisdictions (La Paz County and Pinal County) outside the 10-mile emergency planning zone furnished emergency/evacuation plans.

The City of Phoenix responded that it did not have any all-hazard emergency plans specific to Palo Verde. However, official indicated that the Maricopa County Department of Emergency Management has a Hazard Mitigation Plan for the region.

Request 3: None of the jurisdictions between the 10-mile and 50-mile emergency planning zone submitted documents with emergency plans specific to radiological incidents.

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

Pinal County directed DAP to contact the Arizona Department of Transportation for draft evacuation plans involving state and federal highways. The City of Phoenix stated that no such documents exist or are in its possession. La Paz County did not provide documents or give a written response.

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.³⁹

Consequently, real gaps in emergency planning may occur without valid shadow evacuation estimates.⁴⁰

³⁹ 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>).

⁴⁰ *Id.*

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

Arizona should not wait for the federal government to act. The states, counties, and cities within 50 miles of Palo Verde 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 Palo Verde. 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.⁴¹

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 City⁴² (located 38 miles from the Indian Point Energy Center) which has a population of 8,336,697 people.⁴³

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.⁴⁴ Also, reliable, well-known media sources reiterate the NRC's 2011 Fukushima Dai-ichi evacuation

⁴¹ 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).

⁴² See "Operators of Indian Point Say Changes are Likely" at http://www.nytimes.com/2011/03/22/nyregion/22indian.html?_r=0.

⁴³ Most recent estimate by U.S. Census Bureau as of June 2014. See <http://quickfacts.census.gov>.

⁴⁴ 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>.

recommendation and display maps showing the 50-mile radius for every U.S. nuclear plant.⁴⁵ 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.

⁴⁵ See <http://www.wsj.com/articles/SB10001424052748703362904576219031025249872>.

Appendix A

Index of Documents Received From Local Emergency Planning Authorities within 50 Miles of Palo Verde Nuclear Generating Station

State	Local Jurisdiction	Documents
Arizona	La Paz County	<ul style="list-style-type: none"> <input type="checkbox"/> Communication from Mimi Hernandez, Office of Emergency Management Coordinator (February, 2016); <input type="checkbox"/> La Paz County Emergency Management, Emergency Operations Plans and Procedures (undated).
	Maricopa County	<ul style="list-style-type: none"> <input type="checkbox"/> Communication from Julie Syrmopoulos, Operations Manager of Maricopa County Department of Emergency Management (October, 2015); <input type="checkbox"/> Emergency Operations Plan (January, 2015); <input type="checkbox"/> Assistance Request Survey (available at http://www.maricopa.gov/emerg_mgt/AssistanceRequest/) (undated); <input type="checkbox"/> Palo Verde Nuclear Generating Station Information (available at http://www.maricopa.gov/Emerg_Mgt/pvngs.aspx or https://ein.az.gov/hazards/palo-verde-nuclear-generating-station-pvngs) (undated); <input type="checkbox"/> State Statute Requiring the Legal Description for All Properties within the Emergency Planning Zone (available at http://www.azleg.gov/search/oop/qfullhit.asp?CiWebHitsFile=/ars/26/00319.htm&CiRestriction=nuclear) (undated).
	Pinal County	<ul style="list-style-type: none"> <input type="checkbox"/> Charles Kmet, Director of Emergency Management in Pinal County (October, 2015); <input type="checkbox"/> Pinal County Emergency Response and Recovery Plan (September, 2004); <input type="checkbox"/> Pinal County Emergency Response and Recovery Plan Emergency Support Function 18 Radiological Annex (September, 2004).
	City of Phoenix	<ul style="list-style-type: none"> <input type="checkbox"/> None

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.