

Disaster Accountability Project



Report On Emergency Evacuation Planning for Comanche Peak Nuclear Power Plant

Glen Rose, Texas

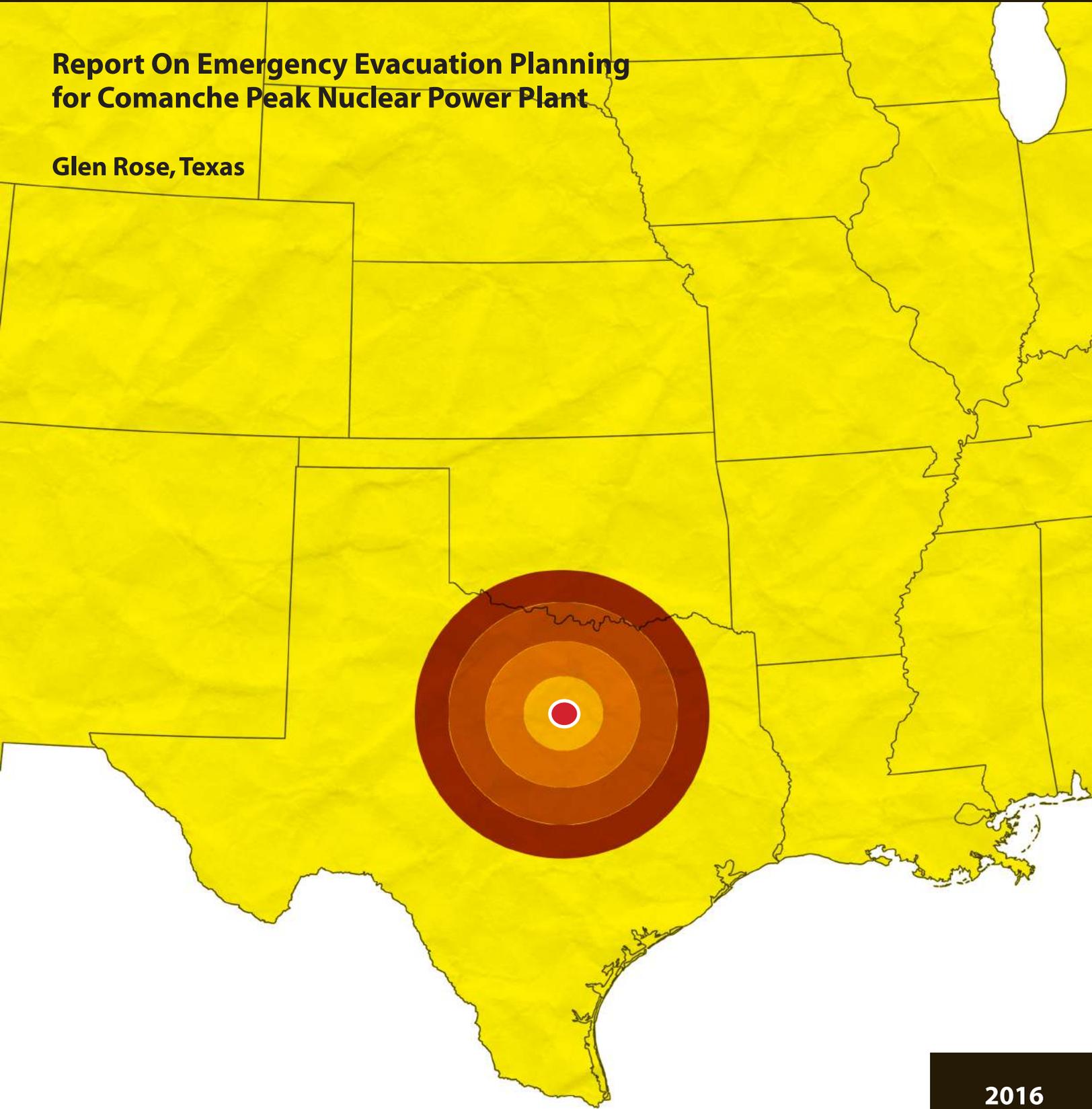


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About Disaster Accountability Project

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

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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 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 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 (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 Comanche Peak Nuclear Power Plant (hereinafter "Comanche Peak").

Comanche Peak Nuclear Power Plant and the Population within 50 Miles

Comanche Peak is 2-unit pressurized water reactor. It is located in Somervell County, TX, less than 40 miles from Fort Worth. Home to 812,238 residents, Fort Worth is the 21st largest metropolitan area in the United States.¹⁹

Owned and operated by Luminant Generation Company, Comanche Peak's Unit 1 came online in 1990 and generates approximately 1,125 megawatts. Unit 2 came online in 1993 and generates approximately 1,124 megawatts. Their licenses will expire in 2030 and 2033, respectively.²⁰ Luminant applied for licenses for two additional units in 2008; the review of these applications was suspended in 2013.

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 Luminant's evacuation time estimate 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 Comanche Peak plant.²²

The Luminant report assumes that 30% of those who live within the shadow zone 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 1,889,000 people.²⁴ Figures 1 and 2 show the stark geographic variation between the established 10-mile emergency planning zone for Comanche Peak 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 Fort Worth'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 Luminant Energy's website at: http://www.luminant.com/wp-content/uploads/2015/02/ComanchePeak_Facts.pdf.

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

²² See Comanche Peak Nuclear Power Plant: Development of Evacuation Time Estimates at <http://pbadupws.nrc.gov/docs/ML1016/ML101610338.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 Comanche Peak 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 Comanche Peak Nuclear Power Plant - Emergency Planning Zone (shaded area)

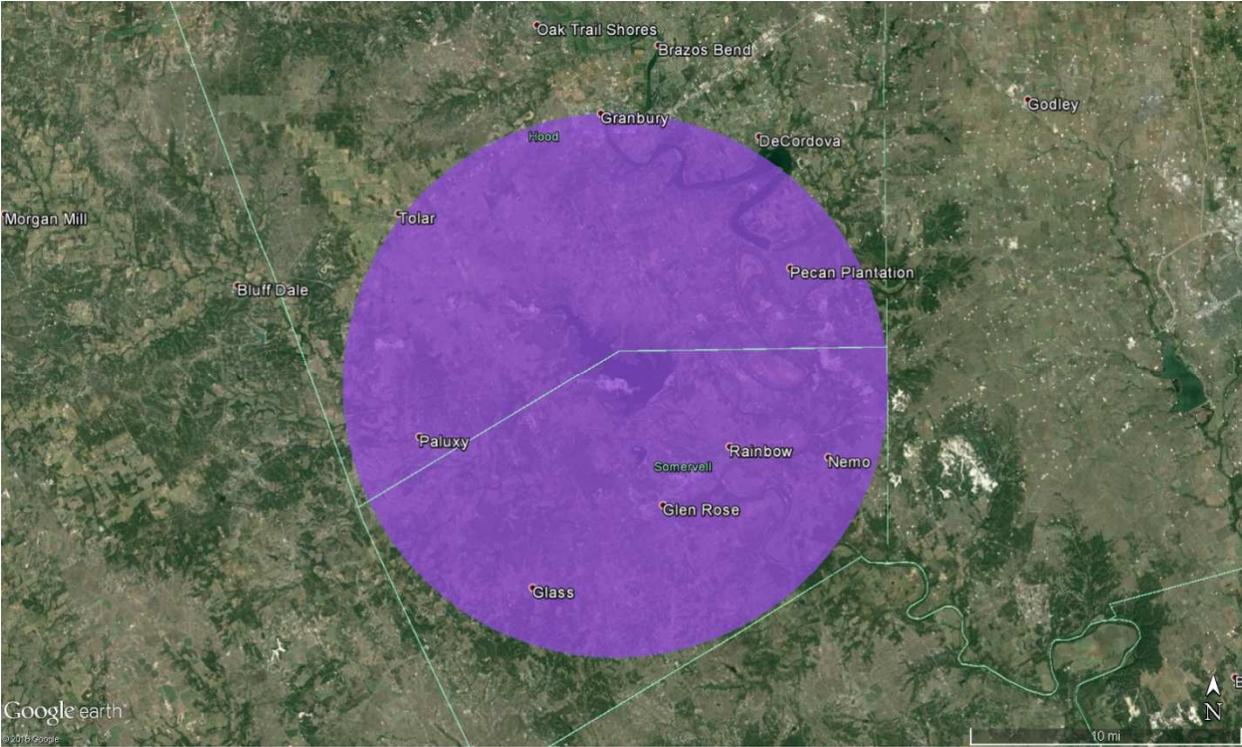
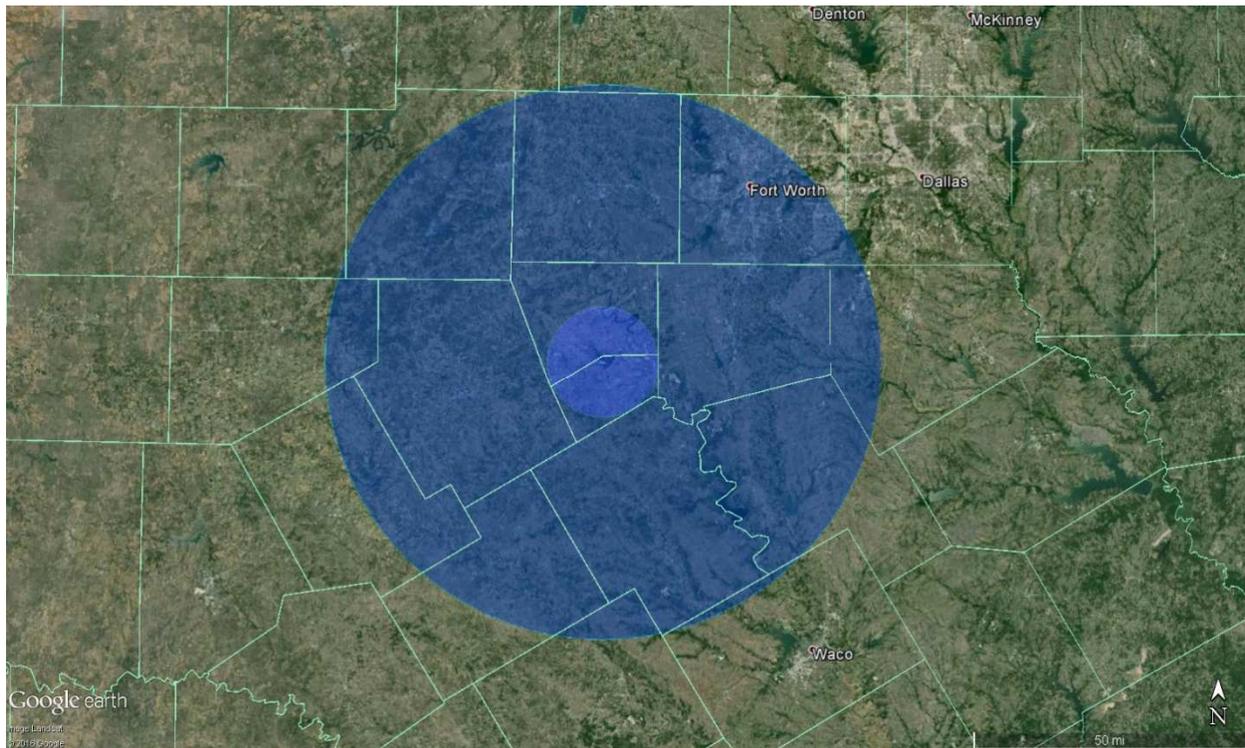


Fig. 2 - 50-mile radius from Comanche Peak Nuclear Power Plant (shaded area).



The 10-mile emergency planning zone is wholly within Somervell County, TX, whereas the 50-mile radius stretches to the Fort Worth, TX area. Further, according to the Natural Resources Defense Council's 10-mile Evacuation Zone, the 2010 population total was 50,000 people and for the 50-mile Potential Contamination Zone, the 2010 population total was 1,889,000 people.²⁶ Finally, Dallas, TX, approximately 60 miles from Comanche Peak, has a population of almost 1,300,000.²⁷

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

²⁷ <http://www.city-data.com/city/Dallas-Texas.html>.

DAP Survey of Jurisdictions within 50 miles of Comanche Peak Nuclear Power Plant

Between October 2015 and January 2016, DAP sent 17 information requests to local jurisdictions²⁸ within the 50-mile radius of Comanche Peak seeking the following four categories of documents and information:

1. Educational materials or plans provided to residents up to 50 miles away from Comanche Peak 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 Comanche Peak; and
4. All studies conducted on the likely rate of “shadow evacuations” related to Comanche Peak, 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.

²⁸ DAP canvassed the entire geographic area within a 50-mile radius around Comanche Peak 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 any 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 Comanche Peak (miles) ²⁹ | Population ³⁰ | Req. 1 | Req. 2 | Req. 3 | Req. 4 |
|-------|------------------|---|--------------------------|-----------------|-----------------|-----------------|-----------------|
| TX | Somervell County | 0 | 8,694 | O ³¹ | O ³² | O ³³ | O ³⁴ |
| TX | Hood County | 1 | 53,921 | NR | P | P ³⁵ | P |
| TX | Bosque County | 10 | 17,780 | N | E | N | N |
| TX | Johnson County | 10 | 157,456 | N ³⁶ | P | N | N |
| TX | Erath County | 11 | 40,147 | N | P | N | N |

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

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

³¹ “All educational materials provided to residents are handled by CPNPP [Comanche Peak Nuclear Power Plant]. CPNPP uses the local phone book for publication of vital information regarding evacuation routes and information.”

³² “Our plans are open record for viewing by citizens during business hours . . . at the Somervell County Law Enforcement Center located at 750 Gibbs Blvd. Glen Rose, Texas 76043.”

³³ “Emergency plans related to our response to an incident at CPNPP contain confidential information.”

³⁴ “CPNPP’s Evacuation Time Estimate study (ETE) was updated in December 2012 per NRC regulations. Although we have a copy of this plan, CPNPP is the owner of this document.”

³⁵ Shared Annex W of Emergency Plan.

³⁶ “We provide no educational materials to the extremely sparse population regarding how to respond to radiological incidents at the Comanche Peak NP Plant. As we have mentioned, the areas you have inquired about have few residences as this is a rural county. Further, the municipalities that might fall within the areas you are inquiring about have their own emergency management program and not the jurisdiction of the county’s program. Additionally, the prevailing winds in relationship to the plant make it beyond extremely unlikely our county would be affected by any incident at the plant.”

| | | | | | | | |
|----|--------------------|----|-----------|-----------------|-----|-----------------|-----|
| TX | Parker County | 18 | 123,164 | NR | NR | N ³⁷ | NR |
| TX | Hill County | 20 | 34,848 | N | P | N ³⁸ | N |
| TX | Palo Pinto County | 22 | 28,096 | N | NR | N ³⁹ | N |
| TX | Tarrant County | 22 | 1,945,360 | N ⁴⁰ | P | N ⁴¹ | N |
| TX | Hamilton County | 23 | 8,199 | N ⁴² | O/N | O/N | O/N |
| TX | City of Fort Worth | 28 | 812,238 | N ⁴³ | P | N ⁴⁴ | N |
| TX | Comanche County | 35 | 13,550 | N ⁴⁵ | P | N | N |

³⁷ The county's radiological annex only mentions: "A portion of Parker County is within the emergency planning zone (ingestion pathways) of the Comanche Peak Nuclear Power Plant. Federal and state officials will provide adequate support in incidents involving Comanche Peak when requested."

³⁸ "Your request surprised me because Comanche Peak is not on our radar. As the crow fly's [sic] yes it's 50 miles. As we drive it however it's much further. None of our plans include Comanche Peak. It's not included in our THIRA as well. However attached are our Annex's that pertain to evacuation and radiological issues. It will be on the radar for future revisions."

³⁹ "[Palo Pinto County's OEM] does not have any items referencing this location. The Power Plant is actually two counties over."

⁴⁰ "[The county] provides public education for radiological incidents through the Regional KnowWhat2do website, <http://www.knowwhat2do.com/think/nuclear-radiological>."

⁴¹ The county's radiological annex only mentions: "A portion of Tarrant County is within the Ingestion Pathway Planning Zone of the Comanche Peak Power Plant. In the event of an incident at Comanche Peak, state and federal agencies may monitor food produced and/or consumed in Fort Worth - Tarrant County. It is important to note that all of Fort Worth and Tarrant County are well outside of the Comanche Peak 10-Mile Emergency Planning Zone."

⁴² "No responsive records were located in the care custody or control of the Office of Hamilton County Judge." The Judge previously asked that DAP to send him the request as he is the "designated Public Information Request Officer." Over three months after sending the initial information request, DAP was encouraged to call the County Clerk.

⁴³ "We do not have documents requested in items (1), (3), or (4) in your letter since we are located well outside the CPNPP ten mile emergency planning zone."

⁴⁴ "We participated in a CPNPP exercise with the state and have observed other exercises. In addition, we support the state emergency response to CPNPP with staff in the Joint Emergency Operations Center that we share with Tarrant County and the state." The county's radiological annex only mentions: "A portion of Tarrant County is within the Ingestion Pathway Planning Zone of the Comanche Peak nuclear power plant. In the event of an incident at Comanche Peak, state and federal agencies may monitor food produced and/or consumed in Fort Worth - Tarrant County. It is important to note that all of Fort Worth and Tarrant County are well outside of the Comanche Peak 10-Mile Emergency Planning Zone."

⁴⁵ "[Comanche County is] located approximately 75 miles from the Comanche peak power plant. We have never received any information or material from the power plant."

| | | | | | | | |
|----|-------------------|----|-----------|----|-----------------|-----------------|----|
| TX | Eastland County | 40 | 18,176 | N | P | N ⁴⁶ | N |
| TX | Ellis County | 40 | 159,317 | NR | E ⁴⁷ | E | NR |
| TX | City of Arlington | 41 | 375,000 | N | P | N | N |
| TX | Dallas County | 47 | 2,518,638 | E | E | E | E |
| TX | Wise County | 48 | 61,638 | NR | NR | NR | NR |

Summary of Responses: Overall

- 16 out of 17 (94%) of the jurisdictions provided responses to the information requests.
- 1 out of 17 (6%) of the jurisdictions (Wise County) did not respond at all.
- 0 out of 4 jurisdictions within 10 miles of Comanche Peak and 0 out of 13 jurisdictions between 10-50 miles of Comanche Peak reported providing educational materials or plans to residents regarding how to respond to a radiological incident at that plant.
- 9 out of 17 (53%) of the jurisdictions provided all-hazard emergency plans and/or evacuation plans.
- 1 out of 17 (6%) of the jurisdictions (Hood County) provided emergency plans specific to radiological incidents at Comanche Peak.
- Only 1 jurisdiction (Hood County) furnished a shadow evacuation plan or study.

Summary of Responses: Within the 10-mile zone

- 1 out of 4 of the jurisdictions (Hood County) within 10 miles of the plant provided emergency plans specific to radiological incidents at Comanche Peak.

Summary of Responses: Outside the 10-mile zone

- No jurisdiction outside the 10-mile zone provided emergency plans specific to radiological incidents at Comanche Peak.

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

Of the four jurisdictions (Somervell County, Hood County, Bosque County, and Johnson County) that constitute the 10-mile emergency planning zone, only Hood County provided documentation or plans pertaining to the Comanche Peak.

Request 1: Somervell County indicated that educational materials and/or plans provided to residents are handled by Comanche Peak. Moreover, the county stated that Comanche Peak uses the local phone

⁴⁶ "Annex D specifically addresses radiological concerns in the EMP [Emergency Management Plan] for Eastland County. Eastland County does not have any reports, records, nor plans specific to radiological incidents at Comanche Peak Nuclear Power Plant."

⁴⁷ County asked Texas Attorney General for opinion on whether the contents of the documents are exempted from disclosure under the Public Information Act..

book for publication of vital information regarding evacuation routes and information. The remaining three jurisdictions (Hood County, Bosque County and Johnson County) either indicated that such documents do not exist or are in its possession, or provided no response at all.

Request 2: Two of the four jurisdictions within the 10-mile radius (Hood County and Johnson County) provided their all-hazard emergency plans and/or evacuation plans. Somervell County stated that its plans are an open record for viewing by residents at the Somervell County Law Enforcement Center.

Request 3: Hood County was the only jurisdiction within the 10-mile radius emergency planning zone that provided emergency plans specific to radiological incidents at Comanche Peak. Both Bosque County and Johnson County did not provide any emergency plans specific to a radiological event at Comanche Peak.

Request 4: Hood County was the only county within the 10-mile emergency zone jurisdictions that provided any documents on shadow evacuations. Bosque County and Johnson County claimed that no such documents exist or are in its possession. Somervell County suggested contacting Luminant for the shadow evacuation study since it is responsible for retaining these studies. 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

Request 1: No jurisdiction beyond the 10-mile emergency planning zone provided its residents with educational materials and/or plans regarding how to respond to a radiological incident at Comanche Peak. Eleven jurisdictions stated that no such documents exist or are in its possession, claimed an exemption, or failed to provide documentation or written response to the request.

Request 2: In response to the request for all-hazard emergency plans, seven jurisdictions (Erath County, Hill County, Tarrant County, City of Fort Worth, Comanche County, Eastland County, and City of Arlington) shared their basic and/or complete plans. Six out of thirteen jurisdictions located between 10 to 50 miles from Comanche Peak failed to share all-hazard emergency plans. However, officials in Ellis County stated that DAP's request had been referred to the Texas Attorney General to determine whether the contents of the planning documents are in fact exempt from disclosure under the Public Information Act.

Request 3: No jurisdiction within the 10-mile and 50-mile emergency planning zone submitted responsive radiological information. Most responses fell into one of the following categories: counties claiming that no information exists or is in its possession, claiming an exemption, or refusing to respond at all. In particular, Comanche County stated that it is located approximately 75 miles from Comanche Peak. However, calculating safe distances from a radiological incident should factor in weather data with regard to radiation plumes.⁴⁸ Nevertheless, given that its distance calculations are based on road miles, this jurisdiction reported having never received any information or material from Comanche Peak regarding response to a radiological incident. Likewise, a Hill County official indicated that the county is slightly more than 50 miles from Comanche Peak (distance confirmed by Google Maps based on driving directions). Nevertheless, the jurisdiction provided an annex that pertains to "evacuation and radiological issues." Therefore, while specific plans for radiological incidents have not been included in

⁴⁸ What if the Fukushima Nuclear Fallout Crisis Had Happened Here? Natural Resources Defense Council - <http://www.nrdc.org/nuclear/fallout/>.

existing emergency plans nor their Threat and Hazard Identification Risk Assessment (THIRA), such plans “will be on the radar for future revisions” (Hill County Office of Emergency Management).

Additionally, while a portion of Parker County is within the emergency planning zone (ingestion pathways) of Comanche Peak, the county responded stating that it will rely on “[f]ederal and state officials [to] provide adequate support in incidents involving Comanche Peak when requested.” Tarrant County reported having never received any information or material from Comanche Peak. However, the county’s radiological annex mentions the following: “A portion of Tarrant County is within the Ingestion Pathway Planning Zone of the Comanche Peak Power Plant. In the event of an incident at Comanche Peak, state and federal agencies may monitor food produced and/or consumed in Fort Worth [and] Tarrant County.”

Request 4: Again, no jurisdiction between 10 and 50 miles from Comanche Peak provided any documents on shadow evacuations, the majority claiming no such documents exist or are in its possession, or an exemption from disclosure, or made no response at all.

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.⁴⁹

Consequently, real gaps in emergency planning may occur without valid shadow evacuation estimates.⁵⁰

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

Texas should not wait for the federal government to act. The states, counties, and cities within 50 miles of Comanche Peak 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 Comanche Peak. 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.⁵¹

⁴⁹ 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>).

⁵⁰ *Id.*

⁵¹ 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,

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 City⁵² (located 38 miles from the Indian Point Energy Center) which has a population of 8,336,697 people.⁵³

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.⁵⁴ 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.⁵⁵ 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.

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).

⁵² See "Operators of Indian Point Say Changes are Likely" at

http://www.nytimes.com/2011/03/22/nyregion/22indian.html?_r=0.

⁵³ Most recent estimate by U.S. Census Bureau as of June 2014. See <http://quickfacts.census.gov>.

⁵⁴ 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>.

⁵⁵ See <http://www.wsj.com/articles/SB10001424052748703362904576219031025249872>.

Appendix A

Index of Documents Received From Local Emergency Planning Authorities within 50 Miles of Comanche Peak Nuclear Power Station

| State | Local Jurisdiction | Documents |
|-------|--------------------|---|
| Texas | Bosque County | <input type="checkbox"/> None |
| | City of Arlington | <input type="checkbox"/> Emergency Preparation Handout (undated); <input type="checkbox"/> Backup EOC Guide <input type="checkbox"/> Natural Gas Emergency Response Attachment <input type="checkbox"/> Lake Arlington Dam Emergency Action Plan Draft Notification Outline <input type="checkbox"/> Snow & Ice Response Operations Plan <input type="checkbox"/> Water Supply Emergency Response Plan <input type="checkbox"/> Tarrant County Local Mitigation Action Plan <input type="checkbox"/> Think Version 10-20-10 (brochure style document) <input type="checkbox"/> ENERVEST Operating, LLC Emergency Response Plan / New Barnett Shale Emergency Response Plan <input type="checkbox"/> Basic Emergency Management Plan (2013) <ul style="list-style-type: none"> <input type="checkbox"/> Annex A, C, D, E, F, G, I, J, K, L, M, N, O, P, Q, S, U, Earthquake Annex, Outdoor warning siren system. |
| | City of Fort Worth | <input type="checkbox"/> Fort Worth - Tarrant County Emergency Management Plan; <ul style="list-style-type: none"> <input type="checkbox"/> Annex A-Q, S-V. |
| | Comanche County | <input type="checkbox"/> Emergency Management Plan (February 2001); <input type="checkbox"/> Annex A: Warning (August 2003); <input type="checkbox"/> Annex D: Radiological Protection (September 2000); <input type="checkbox"/> Annex E: Evacuation (September 2000). |
| | Dallas County | <input type="checkbox"/> Ruling Letter from Texas Attorney General (February 2016). |
| | Eastland County | <input type="checkbox"/> Basic Plan, Eastland County and Cities Adhering to this Plan; <ul style="list-style-type: none"> <input type="checkbox"/> Annex A-O, Q-S, V. |

| | |
|-------------------|--|
| Ellis County | <input type="checkbox"/> Letter to Texas Attorney General requesting exemption (October 2015); <input type="checkbox"/> Ruling Letter from Texas Attorney General (January 2016). |
| Erath County | <input type="checkbox"/> Erath County Basic Plan, Annex A-O, Q-S, U, and V. |
| Hamilton County | <input type="checkbox"/> None |
| Hill County | <input type="checkbox"/> Annex D Radiological Protection (March 2006); <input type="checkbox"/> Annex E Evacuation (September 2000). |
| Hood County | <input type="checkbox"/> Emergency Management Plan for Hood County including the cities of Stockton Bend, Cresson, De Cordova, Granbury, Lipan, and Tolar; <input type="checkbox"/> Annex A-W; <input type="checkbox"/> Development of Evacuation Time Estimates, Comanche Peak Nuclear Power Plant, KLD Engineering (2012). |
| Johnson County | <input type="checkbox"/> Emergency Management Plan for Johnson County, Texas; <input type="checkbox"/> Annex A-V. |
| Palo Pinto County | <input type="checkbox"/> None |
| Parker County | <input type="checkbox"/> State of Texas Annex D: Radiological Emergency Management (February 2013); <input type="checkbox"/> Parker County Annex D: Radiological Protection (February 2015). |
| Tarrant County | <input type="checkbox"/> Communication from Ashley D. Fourt, Assistant District Attorney (December 2015); <input type="checkbox"/> Emergency Management Plan (May 2005); <input type="checkbox"/> Annex E: Evacuation (October 2011); <input type="checkbox"/> Annex D: Radiological Protection (September 2011). |
| Somervell County | <input type="checkbox"/> None |
| Wise County | <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.