

# Monetized Benefits

## Monetized Accident Costs per Year and Accident

	Unit Value	10-Year Total	Ave/Year	Average/Accident
<b>Onsite</b>				
Fatalities	\$8,583,113	\$480,654,328	\$48,065,433	\$316,845
Injuries	\$50,000	\$105,150,000	\$10,515,000	\$69,314
Property Damage		\$2,054,895,236	\$205,489,524	\$1,354,578
<b>Onsite Total</b>		<b>\$2,640,699,564</b>	<b>\$264,069,956</b>	<b>\$1,740,738</b>
<b>Offsite</b>				
Fatalities	\$8,583,113	\$8,583,113	\$858,311	\$5,658
Hospitalizations	\$36,000	\$6,804,000	\$680,400	\$4,485
Medical Treatment	\$1,000	\$14,807,000	\$1,480,700	\$9,761
Evacuations	\$200	\$7,717,800	\$771,780	\$5,088
Sheltering in Place	\$100	\$45,166,500	\$4,516,650	\$29,774
Property Damage		\$11,352,105	\$1,135,211	\$7,483
<b>Offsite Total</b>		<b>\$94,430,518</b>	<b>\$9,443,052</b>	<b>\$62,248</b>
<b>Total</b>		<b>\$2,735,130,082</b>	<b>\$273,513,008</b>	<b>\$1,802,986</b>



# Unquantified Accident Impacts

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Lost product

Emergency response

Cleanup activities

Reduced nearby property values

Environmental impacts



# Third-Party Compliance Audits

## Hourly Assumptions and Unit Costs for Hiring Third Party Auditors

Facility Type	Total Hours for Contracting Process			Unit Labor Cost	Auditor Fee*	Total Unit Cost
	Management	Attorneys	Engineers			
Simple w/ 0-19 FTEs	32	4	0	\$2,807	\$15,000	\$17,807
Simple w/ 20-99 FTEs	44	4	18	\$4,701	\$15,000	\$19,701
Simple w/ 100+ FTEs	30	4	56	\$5,749	\$15,000	\$20,749
Complex w/ 0-19 FTEs	32	4	0	\$3,642	\$40,000	\$43,642
Complex w/ 20-99 FTEs	44	4	18	\$6,209	\$40,000	\$46,209
Complex w/ 100+ FTEs	30	4	56	\$7,710	\$40,000	\$47,710
Small Govt	30	0	25	\$3,630	\$15,000	\$18,630
Large Govt	60	0	39	\$8,951	\$40,000	\$48,951

FTE = Full time Employees

\* Auditor fee information based on comments on the RFI



# Costs

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Note: Costs are based on modeling of simple and complex facilities.



# Monetized Benefits

Average Impacts per Year and Accident

	10-Year Total	Ave./Year	Average/Accident
<b>On-site</b>			
Fatalities	56	5.60	0.037
Injuries	2,103	210	1.386
Property Damage	\$2,054,895,236	\$205,489,524	\$1,354,578
<b>Offsite</b>			
Fatalities	1	0.10	0.001
Hospitalizations	189	19	0.125
Medical Treatment	14,807	1,481	9.76
Evacuations	38,589	3,859	25.44
Sheltering in Place	451,665	45,167	298
Property Damage	\$11,352,105	\$1,135,211	\$7,483



# Offsite Impacts by Year

Year	Impact Accidents with Offsite Impacts	Number of Deaths	Hospital Visits	People undergoing Other Medical Treatment	Number of people Evacuated	Number of people Sheltered in place	Value of Property Damage
2004	66	0	43	239	5,656	96,958	\$1,414,834
2005	54	0	4	32	3,927	135,260	\$687,996
2006	53	0	7	26	1,533	11,792	\$833,000
2007	61	0	33	212	15,464	32,682	\$122,980
2008	45	0	8	74	2,798	4,771	\$318,191
2009	44	1	27	37	3,102	8,984	\$7,750
2010	36	0	42	112	3,564	4,180	\$2,475,500
2011	36	0	2	11	699	47,833	\$235,104
2012	36	0	19	14,013	1,008	98,120	\$1,536,600
2013	42	0	4	51	838	11,085	\$3,720,150
Annual Average	47.3	0.1	18.9	1,480.7	3,859	45,167	\$1,135,211
Total Reportable	<b>473</b>	<b>1</b>	<b>189</b>	<b>14,807</b>	<b>38,589</b>	<b>451,665</b>	<b>\$11,352,105</b>



# On-Site Impacts by Year

Year	Impact Accidents	Employee Deaths	Employee Injuries	Public Responder Or Public Injuries	Public Responder Or Public Deaths	Value of Property Damage
2004	197	6	211	46	0	\$124,186,397
2005	152	16	370	6	0	\$343,100,280
2006	140	3	193	11	0	\$181,088,015
2007	204	5	188	60	0	\$207,676,070
2008	168	6	194	11	0	\$514,472,444
2009	149	5	221	6	2	\$87,029,904
2010	128	9	130	5	0	\$114,845,119
2011	138	2	127	0	0	\$108,642,919
2012	118	1	159	0	0	\$86,245,834
2013	123	3	162	3	0	\$287,608,254
Annual Average	151.7	5.6	195.5	14.8	0	\$205,489,524
Total Reportable	1,517	56	1,955	148	2	\$2,054,895,236



# Benefits

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Difficult to accurately project benefits for a rule that addresses accidents that are both relatively rare and highly variable in their impacts

## Reductions in:

- Number of people killed, injured, and evacuated or otherwise inconvenienced by sheltering in place;
- Damage caused to property on-site and off including product, equipment, and buildings; and
- Damages to the environment and ecosystems