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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-DPC-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DPC-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DPC-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-DPC-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DPC-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DPC-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DPC inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-DSTD-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary fails, and a moderator enters the canister.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DSTD-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DSTD-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DSTD-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-DSTD-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-DSTD-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-HLW-SEQ05-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-HLW-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-HLW-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-HLW-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-HLW-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-HLW-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-HLW-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-MCO-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an MCO inside a transportation cask, due to CTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-MCO-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to an MCO inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-MCO-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to an MCO inside a transportation cask, due to CTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-MCO-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to an MCO inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-MCO-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to an MCO inside a transportation cask, due to CTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-TAD-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-TAD-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-TAD-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-TAD-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-TAD-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-TAD-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a transportation cask or aging overpack, due to CTT or site transporter collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&D-SEQ03-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door structure remains intact, the canisters remain intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&D-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, a canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-H&D-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canisters remain intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&D-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&D-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-H&D-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&D-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&M-SEQ03-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door structure remains intact, the canisters remain intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-H&M-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, a canister fails, the confinement boundary fails, and a moderator enters the canister.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&M-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canisters remain intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&M-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&M-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary remains intact, and a moderator enters the canister.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-H&M-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-H&M-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, a canister fails, the confinement boundary fails, and a moderator enters the canister.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-TAD-SEQ03-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door structure remains intact, the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-TAD-SEQ07-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door structure remains intact, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-TAD-SEQ09-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in a direct exposure from loss of shielding. In this sequence the cell door fails and impacts the waste form, the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-TAD-SEQ10-RRF	Filtered radionuclide release	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator is excluded from entering the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-TAD-SEQ11-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in a filtered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD07-WP-TAD-SEQ12-RRU	Unfiltered radionuclide release	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator is excluded from entering the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD07-WP-TAD-SEQ13-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to a TAD canister inside a waste package, due to WPTT collision with shield door, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the cell door fails and impacts the waste form, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-DPC-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DPC, due to collision between two CTMs during canister transfer, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 DPC and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-DSTD-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DOE standardized canister, due to collision between two CTMs during canister transfer, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 DOE standardized canister and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-HLW-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an HLW canister, due to collision between two CTMs during canister transfer, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 HLW canister and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-HLW-SEQ04-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister, due to collision between two CTMs during canister transfer, resulting in a filtered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 HLW canister and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD08-HLW-SEQ06-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister, due to collision between two CTMs during canister transfer, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 HLW canister and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-MCO-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an MCO, due to collision between two CTMs during canister transfer, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 MCO and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD08-TAD-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister, due to collision between two CTMs during canister transfer, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 TAD canister and another canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-DPC-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DPC, during canister transfer by a CTM, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 DPC	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-DSTD-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a DOE standardized canister, during canister transfer by a CTM, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 DOE standardized canister and 1 HLW canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD09-HLW-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an HLW canister, during canister transfer by a CTM, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	2 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-HLW-SEQ4-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister, during canister transfer by a CTM, resulting in a filtered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	2 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-HLW-SEQ6-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a structural challenge to an HLW canister, during canister transfer by a CTM, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary fails, and a moderator enters the canister.	2 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-MCO-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to an MCO, during canister transfer by a CTM, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 MCO and 1 HLW canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD09-TAD-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister, during canister transfer by a CTM, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD10-WP-H&D-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during WPTT transfer to the Waste Package Positioning Room, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD10-WP-H&M-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, during WPTT transfer to the Waste Package Positioning Room, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD10-WP-TAD-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during WPTT transfer to the Waste Package Positioning Room, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD11-WP-H&D-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during waste package assembly and closure, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD11-WP-H&M-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, during waste package assembly and closure, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD11-WP-TAD-SEQ02-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during waste package assembly and closure, resulting in a direct exposure from loss of shielding. In this sequence the canister remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD13-WP-H&D-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during WPTT transfer to docking station, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD13-WP-H&D-SEQ3-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during WPTT transfer to docking station, resulting in a direct exposure from loss of shielding. In this sequence the waste package fails, and the canisters remain intact.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD13-WP-H&M-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, during WPTT transfer to docking station, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD13-WP-TAD-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during WPTT transfer to docking station, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the shielding fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD13-WP-TAD-SEQ3-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during WPTT transfer to docking station, resulting in a direct exposure from loss of shielding. In this sequence the waste package fails, and the canister remains intact.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD15-WP-H&D-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during export activities, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD15-WP-H&D-SEQ3-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, during export activities, resulting in a direct exposure from loss of shielding. In this sequence the waste package fails, and the canisters remain intact.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD15-WP-H&M-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a combination of MCOs and HLW canisters inside a waste package, during export activities, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD15-WP-TAD-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during export activities, resulting in a direct exposure from loss of shielding. In this sequence the waste package remains intact, and the confinement boundary fails.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD15-WP-TAD-SEQ3-DE	Direct exposure, loss of shielding	This event sequence represents a structural challenge to a TAD canister inside a waste package, during export activities, resulting in a direct exposure from loss of shielding. In this sequence the waste package fails, and the canister remains intact.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD17-DSTD-SEQ2	Direct exposure, loss of shielding	This event sequence represents a direct exposure during preparation activities of a transportation cask containing a DOE standardized canister. In this sequence there are no pivotal events.	9 DOE standardized canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD17-HLW-SEQ2	Direct exposure, loss of shielding	This event sequence represents a direct exposure during preparation activities of a transportation cask containing an HLW canister. In this sequence there are no pivotal events.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD17-MCO-SEQ2	Direct exposure, loss of shielding	This event sequence represents a direct exposure during preparation activities of a transportation cask containing an MCO. In this sequence there are no pivotal events.	4 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD17-TAD-SEQ2	Direct exposure, loss of shielding	This event sequence represents a direct exposure during preparation activities of a transportation cask containing a TAD canister. In this sequence there are no pivotal events.	1 TAD canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD20-HLW-SEQ4-RRC	Filtered radionuclide release, important to criticality	This event sequence represents a thermal challenge to an HLW canister, due to a fire, resulting in a filtered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD20-HLW-SEQ6-RRC	Unfiltered radionuclide release, important to criticality	This event sequence represents a thermal challenge to an HLW canister, due to a fire, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence
ESD20-WP-H&D-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a thermal challenge to a combination of a DOE standardized canister and HLW canisters inside a waste package, due to a fire, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	5 HLW canisters and 1 DOE standardized canister	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

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Table G-3. Beyond Category 2 Final Event Sequences Summary (Continued)

Event Sequence Group ID[a]	End State	Description	Material-At-Risk[b]	Mean[c]	Median[c]	Std Dev[c]	Event Sequence. Cat.	Basis for Categorization
ESD20-WP-H&M-SEQ2-DE	Direct exposure, loss of shielding	This event sequence represents a thermal challenge to a combination of MCOs and HLW canisters inside a waste package, due to a fire, resulting in a direct exposure from loss of shielding. In this sequence the canisters remain intact, and the shielding fails.	2 HLW canisters and 2 MCOs	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of distribution for number of occurrences of event sequence

NOTE: [a] The categorization of event sequences involving MCOs is considered to be preliminary.
[b] The material at risk is, as relevant, based upon the nominal capacity of the waste form container involved in the event sequence under consideration, or accounts for the specific operation covered by the event sequence.
[c] The mean, median, and standard deviation displayed are for the number of occurrences, over the preclosure period, of the event sequence under consideration.
AO = aging overpack; CTM = canister transfer machine; CTT = cask transfer trolley; DOE = U.S. Department of Energy; DPC = dual-purpose canister; HLW = high-level radioactive waste; MCO = multicanister overpack; TAD = transportation, aging, and disposal; TC = transportation cask; TEV = transport and emplacement vehicle; WPTT = waste package transfer trolley.

Source: Original

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Table G-4. Important to Criticality Final Event Sequences Summary

Event Sequence Group ID	End State	Description	Material-At-Risk	Mean	Median	Std Dev	Event Sequence. Cat.	Basis for Categorization
ESD01-DPC-SEQ5-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to a DPC inside a transportation cask, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 DPC	2.E-12	5.E-13	7.E-12	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-DPC-SEQ7-RRC	RR-UNFILTERED-ITC	This event sequence represents a structural challenge to a DPC inside a transportation cask, during receipt activities, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 DPC	6.E-14	0.E+00	3.E-13	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-DSTD-SEQ5-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 or 9 DOE standardized canisters	2.E-12	6.E-13	7.E-12	Beyond Category 2	Mean of event sequence occurrence distribution

Table G-4. Important to Criticality Final Event Sequences Summary (Continued)

Event Sequence Group ID	End State	Description	Material-At-Risk	Mean	Median	Std Dev	Event Sequence. Cat.	Basis for Categorization
ESD01-DSTD-SEQ7-RRC	RR-UNFILTERED-ITC	This event sequence represents a structural challenge to a DOE standardized canister inside a transportation cask, during receipt activities, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary fails, and a moderator enters the canister.	5 or 9 DOE standardized canisters	7.E-14	0.E+00	3.E-13	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-HLW-SEQ5-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-HLW-SEQ7-RRC	RR-UNFILTERED-ITC	This event sequence represents a structural challenge to an HLW canister inside a transportation cask, during receipt activities, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary fails, and a moderator enters the canister.	5 HLW canisters	0.E+00	0.E+00	0.E+00	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-MCO-SEQ5-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to an MCO inside a transportation cask, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	4 MCOs	6.E-13	2.E-13	2.E-12	Beyond Category 2	Mean of event sequence occurrence distribution

Table G-4. Important to Criticality Final Event Sequences Summary (Continued)

Event Sequence Group ID	End State	Description	Material-At-Risk	Mean	Median	Std Dev	Event Sequence. Cat.	Basis for Categorization
ESD01-MCO-SEQ7-RRC	RR-UNFILTERED-ITC	This event sequence represents a structural challenge to an MCO inside a transportation cask, during receipt activities, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary fails, and a moderator enters the canister.	4 MCOs	2.E-14	0.E+00	8.E-14	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-TAD-SEQ5-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to a TAD canister inside a transportation cask, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 TAD canister	4.E-11	1.E-11	1.E-10	Beyond Category 2	Mean of event sequence occurrence distribution
ESD01-TAD-SEQ7-RRC	RR-UNFILTERED-ITC	This event sequence represents a structural challenge to a TAD canister inside a transportation cask, during receipt activities, resulting in an unfiltered radionuclide release also important to criticality. In this sequence the transportation cask fails, the canister fails, the confinement boundary fails, and a moderator enters the canister.	1 TAD canister	1.E-12	0.E+00	5.E-12	Beyond Category 2	Mean of event sequence occurrence distribution
ESD02-TAD-SEQ04-RRC	RR-FILTERED-ITC	This event sequence represents a structural challenge to a TAD canister inside an aging overpack, during receipt activities, resulting in a filtered radionuclide release also important to criticality. In this sequence the canister fails, the confinement boundary remains intact, and a moderator enters the canister.	1 TAD canister	6.E-11	2.E-11	2.E-10	Beyond Category 2	Mean of event sequence occurrence distribution