
REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

APR1400 Design Certification

Korea Electric Power Corporation / Korea Hydro & Nuclear Power Co., LTD

Docket No. 52-046

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Date of RAI Issue: 11/10/2015

Question No. 07.03-4

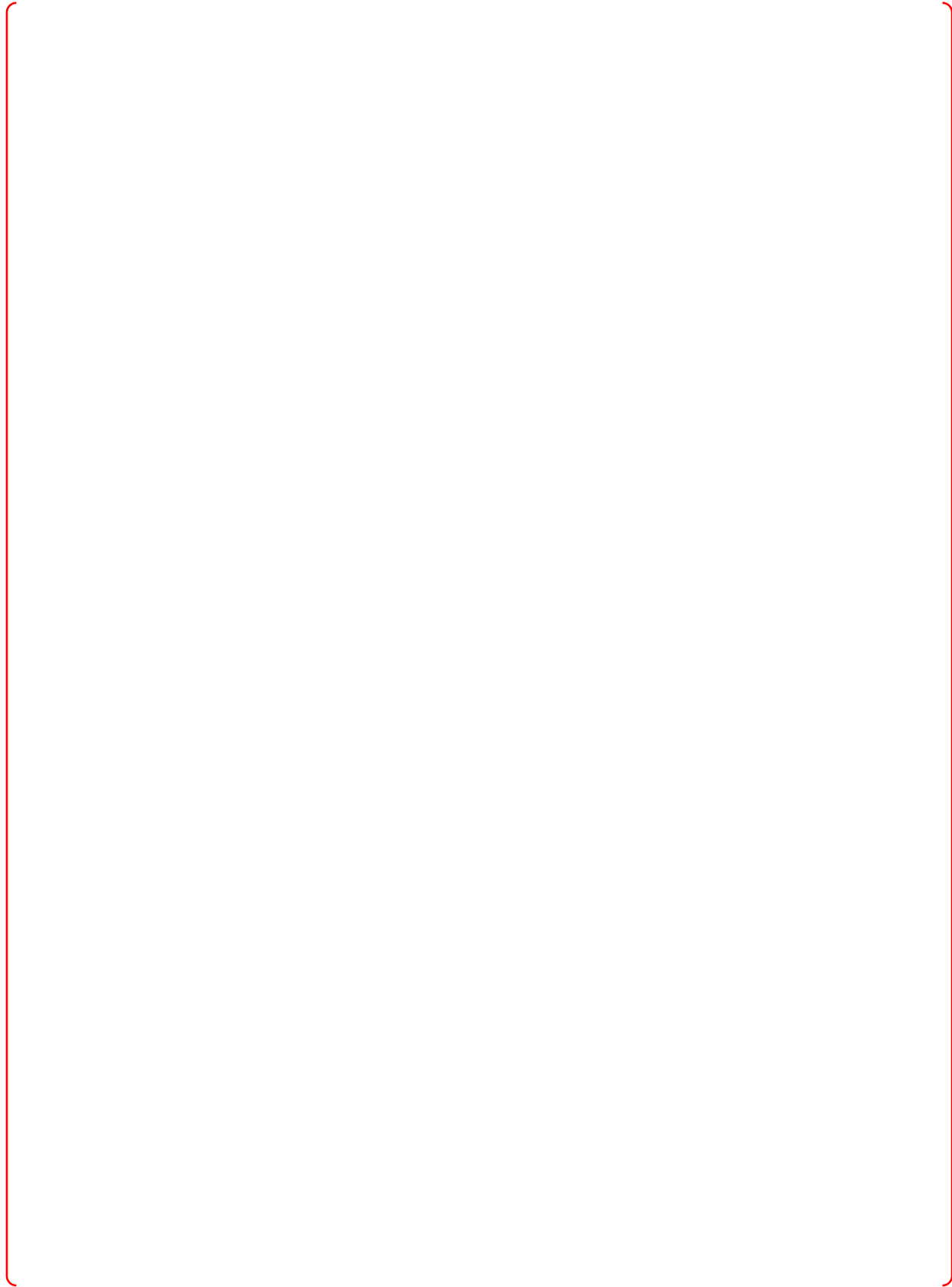
Describe the reasons why the response times are calculated differently for some safety actuation signals which are generated from the same ESF-Component Control System (ESF-CCS).

10 CFR 50.55a(h)(3) states "Applications filed on or after May 13, 1999, for construction permits and operating licenses under this part, and for design approvals, design certifications, and combined licenses under part 52 of this chapter, must meet the requirements for safety systems in IEEE Std. 603-1991 and the correction sheet dated January 30, 1995." IEEE Std. 603-1991, Clause 6.1, requires timely automatic control action when events occur too quickly for operators to intervene.

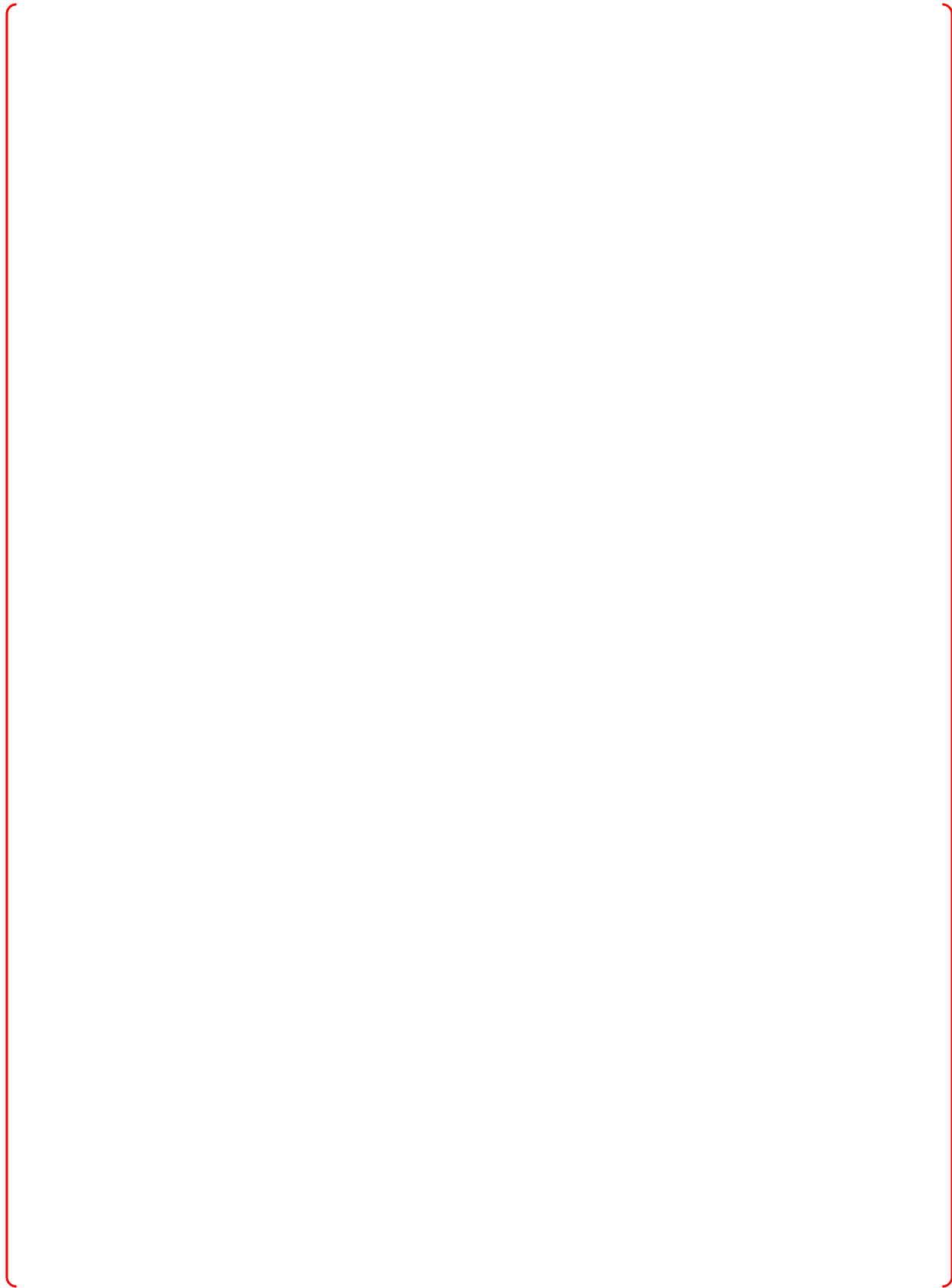
It is not clear why the response times are calculated differently for some safety actuation signals generated from the same ESF-CCS. For example, Figure 7.12-3, "Response Time Analysis for ESF-CCS," in Technical Report, APR1400-Z-J-NR-14013, Rev. 0, "Response Time Analysis of Safety I&C System" shows multiples of different controller racks and component interface modules (CIM) before sending an actuation signal to its destination. However, Figure 7.12-6, "Response Time Analysis for ESF-CCS," in the same technical report just shows one of each controller rack before sending an actuation signal to its destination. Provide necessary descriptive information or clarification on how the response times are calculated differently for some ESF actuation signals which are executed in the same safety I&C system.

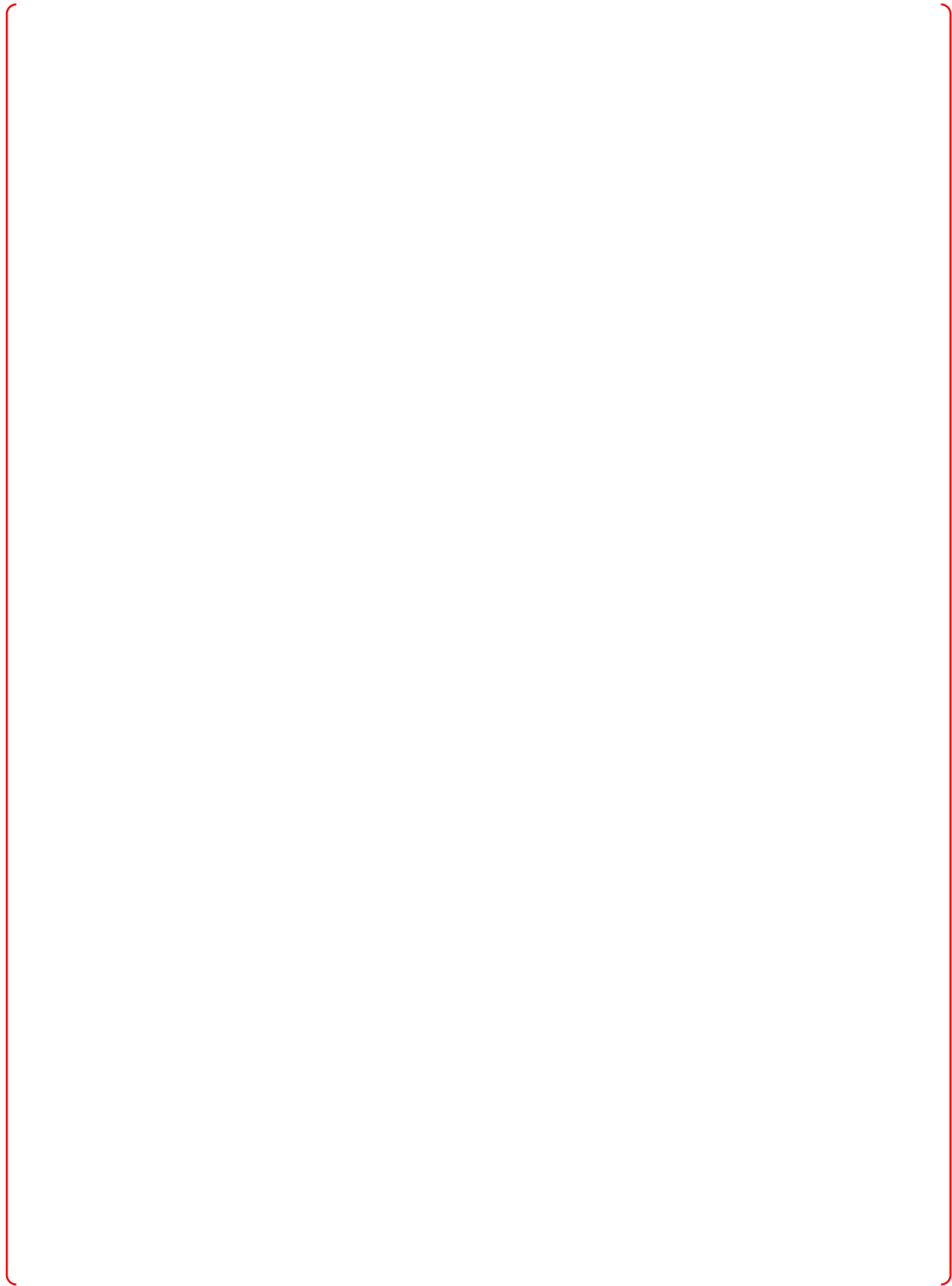
Response – (Rev. 1)

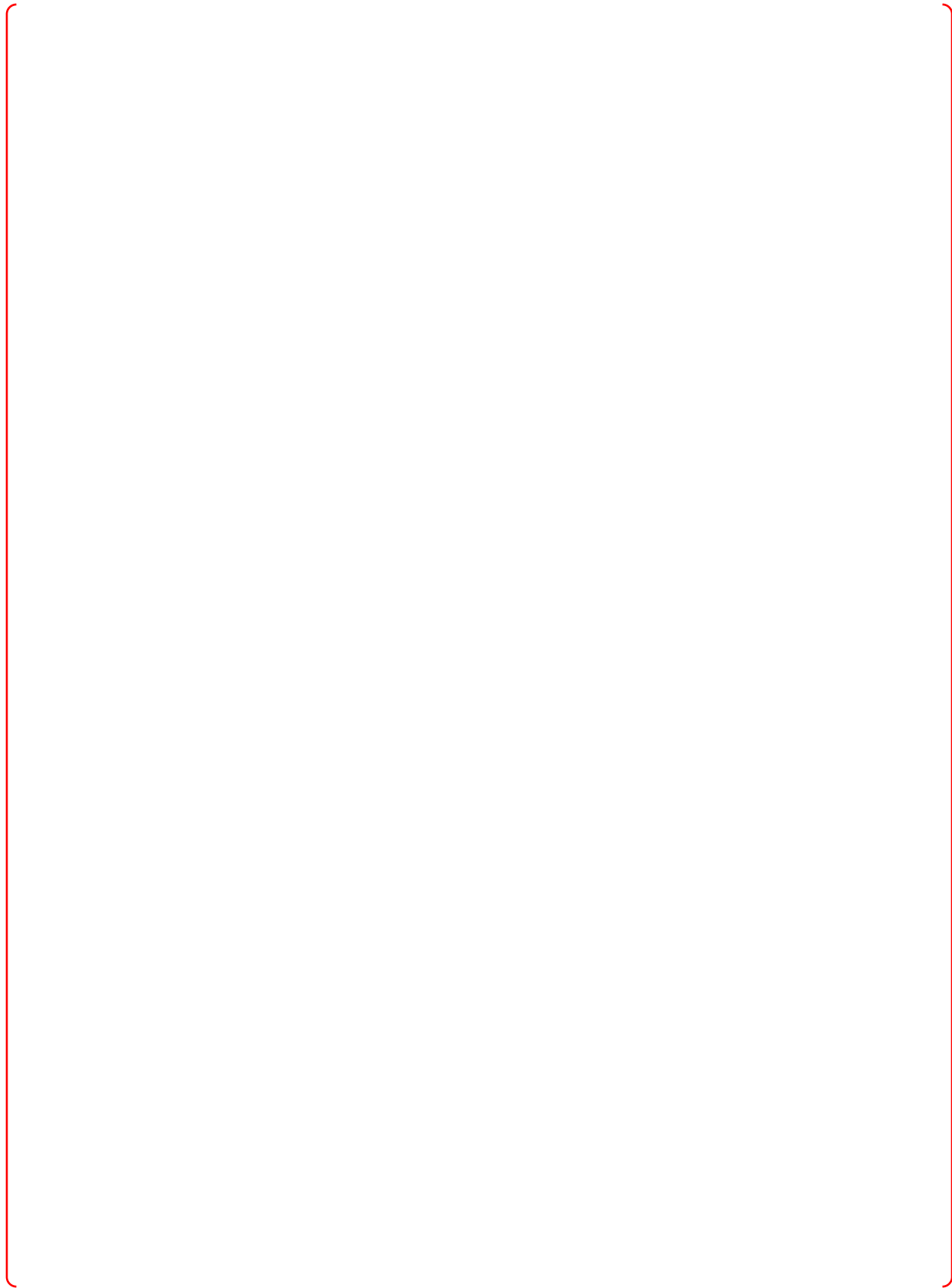
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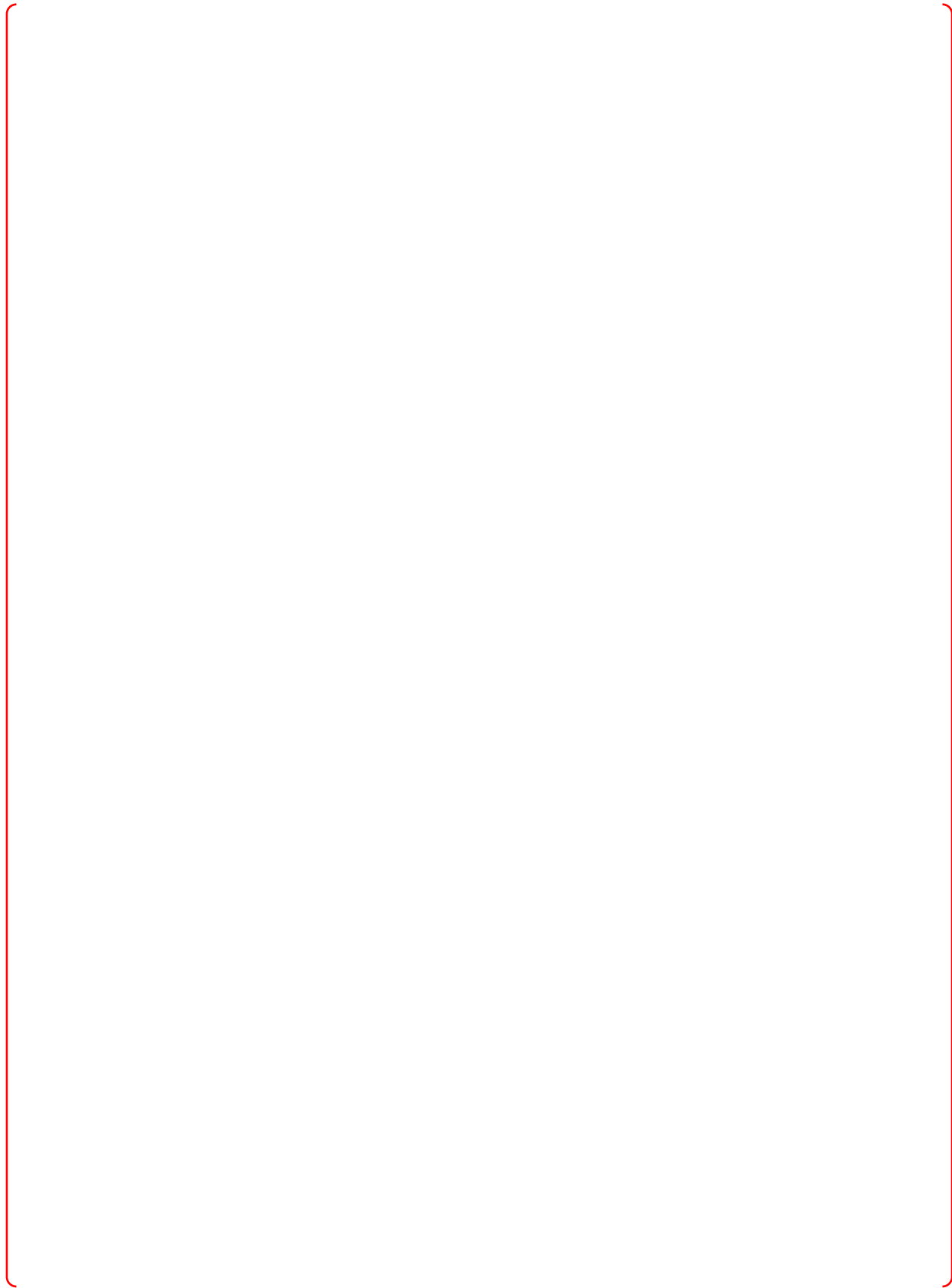


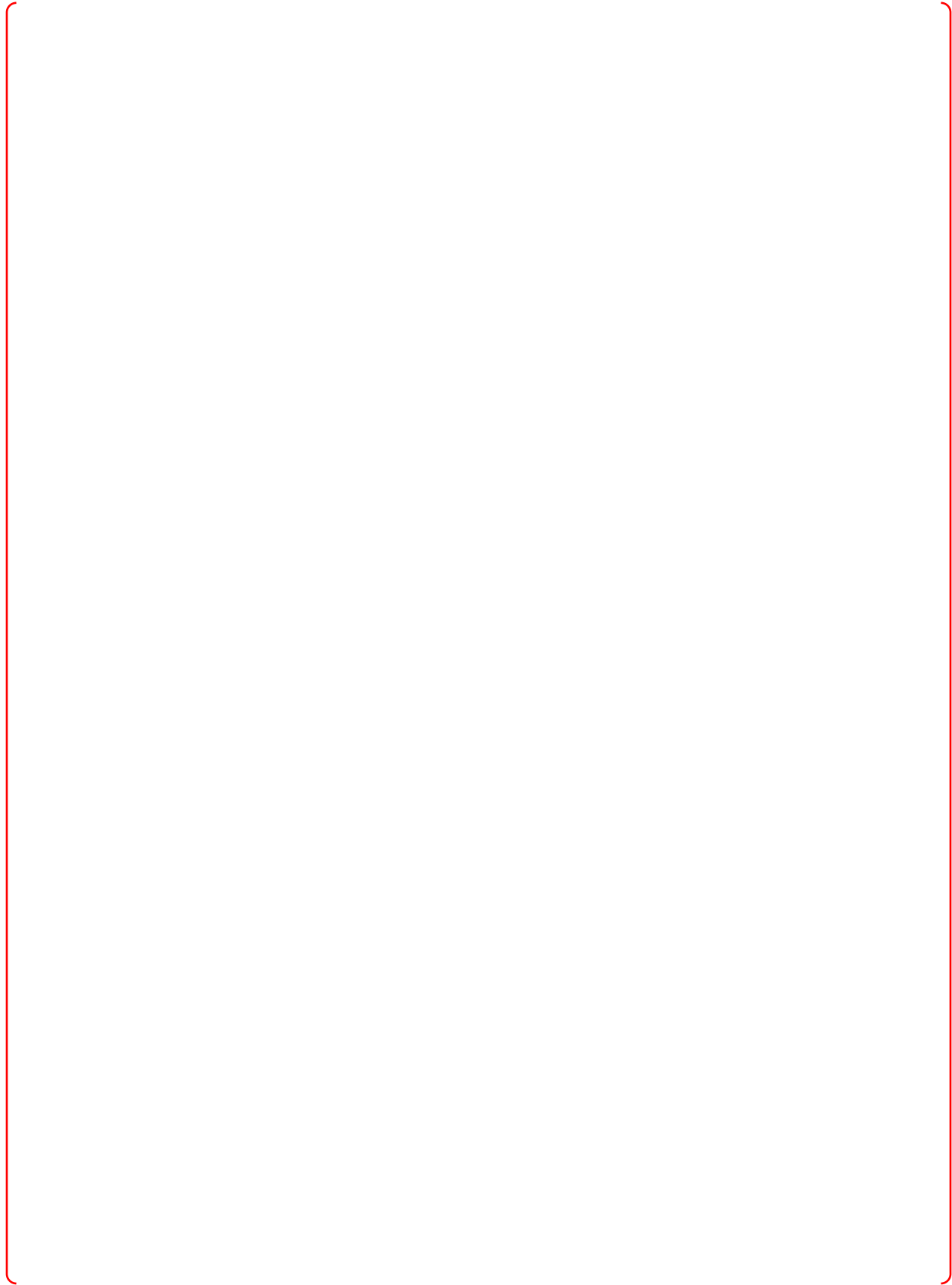
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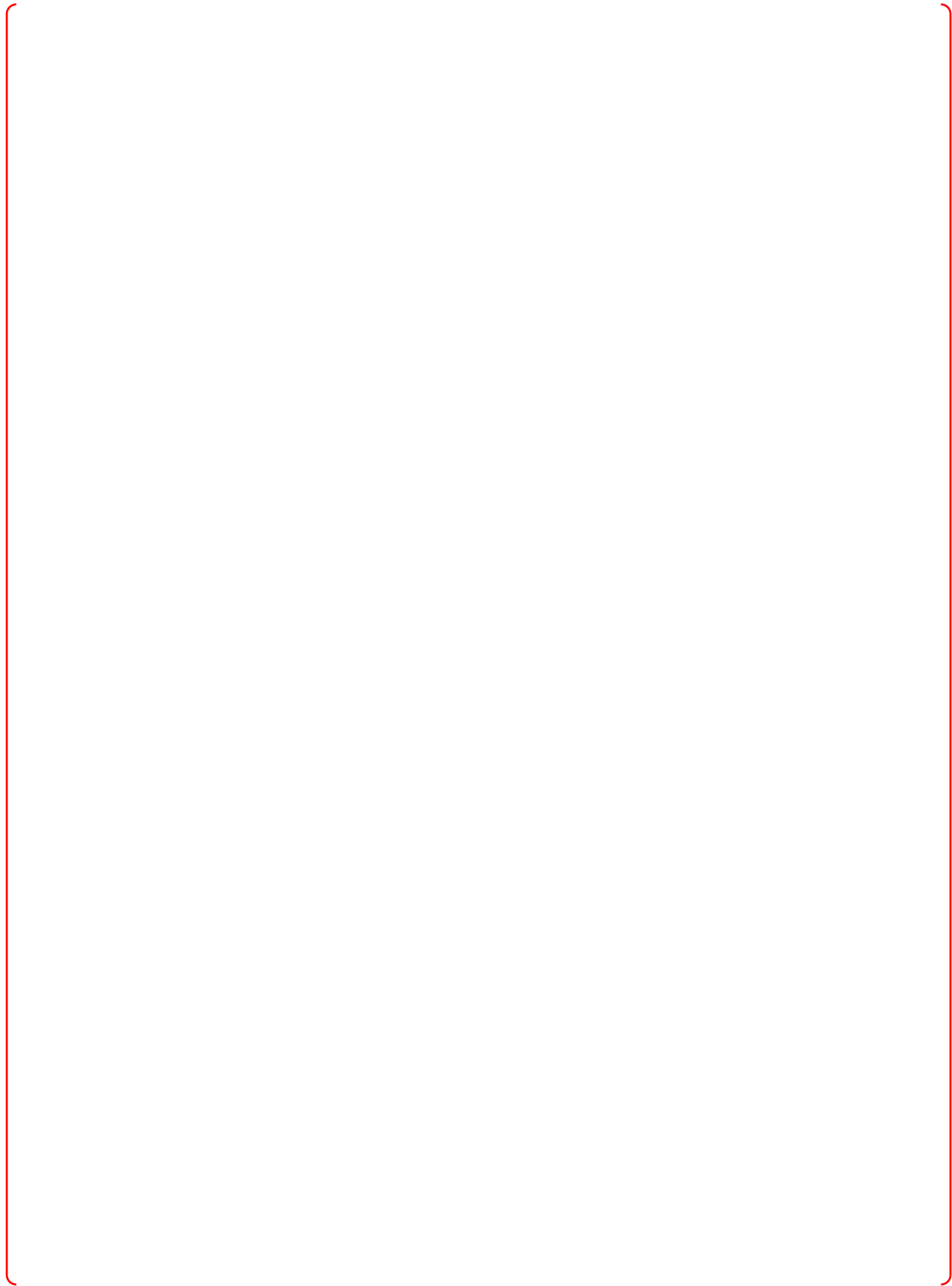


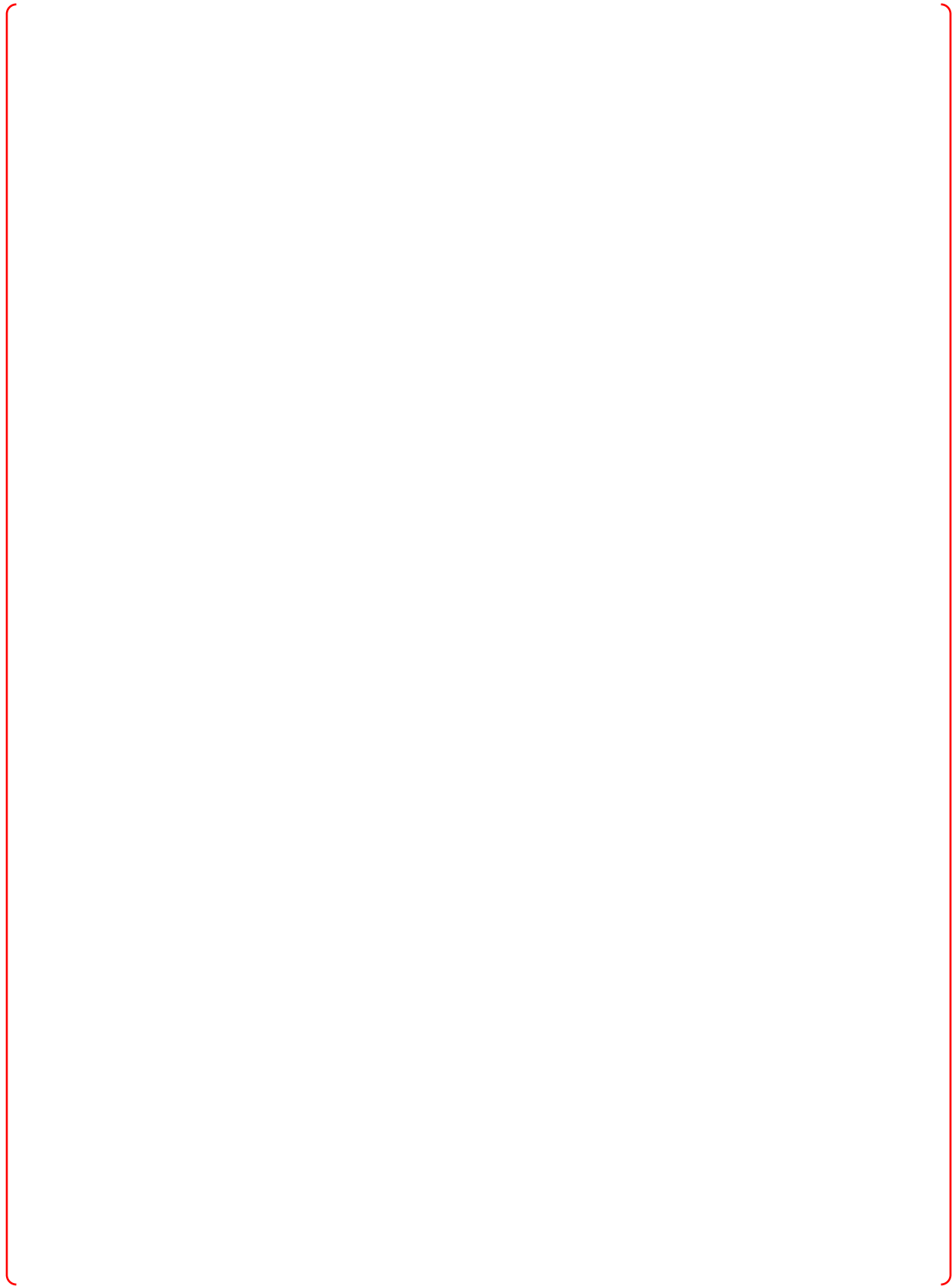


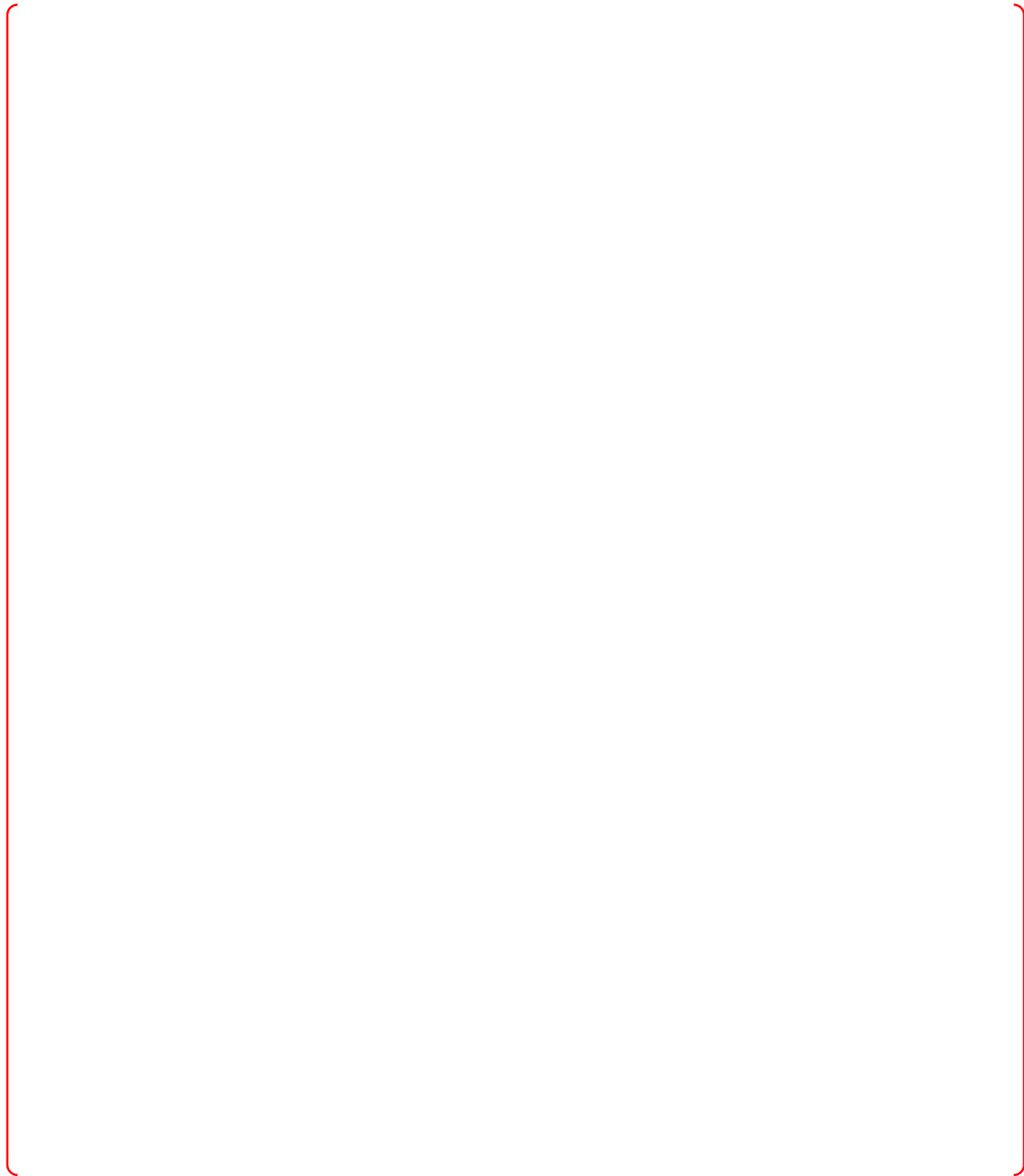












Impact on DCD

There is no impact on the DCD.

Impact on PRA

There is no impact on the PRA.

Impact on Technical Specifications

There is no impact on the Technical Specifications.

Impact on Technical/Topical/Environmental Reports

Technical Report APR1400-Z-J-NR-14013-NP, Rev. 0, "Response Time Analysis of Safety I&C System," Section 7.21 will be added, as indicated in the attachment associated with this response.

7.10.2	CEA Positions.....	36
7.10.3	CEAC Penalty Factor	38
7.11	LDNBR FOR REACTOR TRIP	40
7.11.1	ENFMS Detectors.....	40
7.11.2	CEA Positions.....	42
7.11.3	Cold Leg Temperature.....	45
7.11.4	Hot Leg Temperature	46
7.11.5	Primary Coolant Pump Shaft Speed	48
7.11.6	Reactor Coolant Pressure from Pressurizer.....	50
7.11.7	CEAC Penalty Factor	52
7.12	LPP FOR ESF ACTUATION	54
7.12.1	Safety Injection	55
7.12.2	Containment Isolation.....	57
7.13	HCP for ESF Actuation.....	61
7.13.1	Safety Injection	61
7.13.2	Containment Isolation.....	64
7.13.3	Main Steam Isolation	68
7.14	HHCP for ESF Actuation	71
7.14.1	Containment spray pump	71
7.14.2	Containment isolation valves closed on CSAS	75
7.15	LSGP for ESF Actuation.....	77
7.15.1	Main Steam Isolation	77
7.16	LSGL FOR ESF-ACTUATION.....	81
7.16.1	Auxiliary Feedwater Pump (motor driven)	81
7.16.2	Auxiliary Feedwater Pump (turbine driven)	84
7.17	HSGL FOR ESF-ACTUATION	85
7.17.1	Main Steam Isolation	86
7.18	CREVAS	89
7.18.1	Control room air intake radiation – High.....	89
7.19	FHEVAS	93
7.19.1	Spent fuel pool area radiation – High	93
7.20	CPIAS	96
7.20.1	Containment upper operating area / operating area radiation – High.....	96
8	REFERENCES	98
9	DEFINITIONS	99
	APPENDIX A CONFORMANCE TO BTP 7-21	A1

Table 6.14-2	Response Time Allocation for HHCP for ESF actuation – Containment Isolation Valves Closed on CSAS	18
Table 6.15-1	Response Time Allocation for LSGP for ESF actuation – MSIS actuated MSIVs.....	18
Table 6.15-2	Response Time Allocation for LSGP for ESF actuation – MSIS actuated MFIVs.....	19
Table 6.16-1	Response Time Allocation for LSGL for ESF actuation – Auxiliary Feedwater Pump (motor driven)	19
Table 6.16-2	Response Time Allocation for LSGL for ESF actuation – Auxiliary Feedwater Pump (turbine driven)	19
Table 6.17-1	Response Time Allocation for HSGL for ESF actuation – MSIS actuated MSIVs.....	20
Table 6.17-2	Response Time Allocation for HSGL for ESF actuation – MSIS actuated MFIVs.....	20
Table 6.18-1	Response Time Allocation for CREVAS for ESF actuation – CREVAS actuated isolation dampers	20
Table 6.18-2	Response Time Allocation for CREVAS for ESF actuation – Emergency makeup ACU fan	20
Table 6.19-1	Response Time Allocation for FHEVAS for ESF actuation – FHEVAS actuated isolation dampers	21
Table 6.19-2	Response Time Allocation for FHEVAS for ESF actuation – Emergency makeup ACU fan	21
Table 6.20-1	Response Time Allocation for CPIAS for ESF actuation – CPIAS actuated isolation valves	21



Table 7.21-1 Signal Path for each ESF-CCS Response Time.....	98
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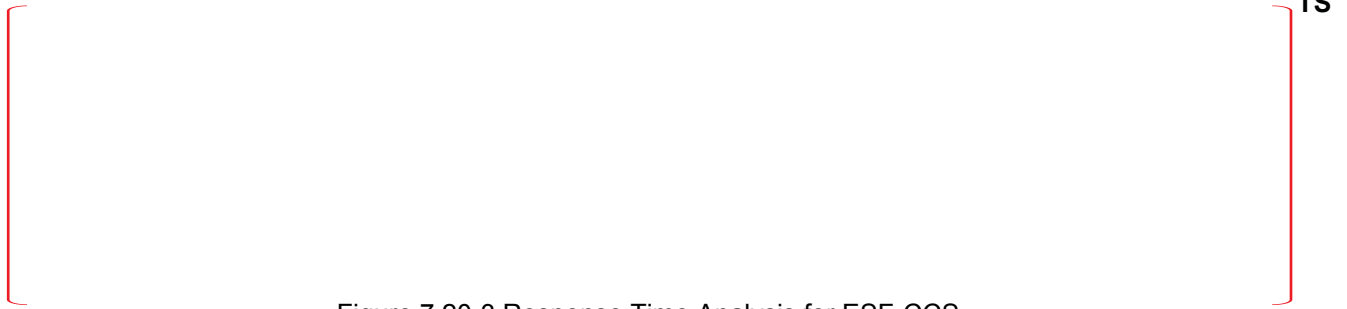


Figure 7.20-3 Response Time Analysis for ESF-CCS

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