

The ANS Risk-informed, Performance-based Principles and Policy Committee: Community of Practice (RP3C CoP)—Presentation Bibliography

([Link to RP3C CoP Collection on NST Open Research](#))

[Introduction to RISE: A digital framework for maintaining a risk-informed safety case for current and next generation nuclear power plants](#)

Mankosa M. Introduction to RISE: A digital framework for maintaining a risk-informed safety case for current and next generation nuclear power plants [version 1; not peer reviewed]. Nucl Sci Technol Open Res 2025, 3:49 (<https://doi.org/10.21955/nuclscitechnolopenres.1115190.1>) Presented October 3, 2025

[Application of a qualitative risk-informed, performance-based approach for the MARVEL microreactor at the Idaho National Laboratory](#)

I gtuvgt'F0Crr rlec vqp'qh'c's wrksc vkg'tkumlphqto gf.'r gthqto cpeg/dcugf'crr tqcej 'hqt'vj g'O CTXGN' o letqtgccevt'c'v'j g'Kcj q'P c vqpcn'Ncdqtcvt {'jxgtukqp'3=pqv'r ggt'tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-69'*j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu03373; : 0Rtugpvvf 'Cwi wuv'4; ." 4247

[TRD'F guki p'c'pf 'Negpulpi 'qh'v'j g'P wUecrg'WU682'UO T](#)

Y gngt'MOP wUecrg'WU682'tkumlphqto gf.'r gthqto cpeg/dcugf '*TRD'F guki p'c'pf 'hcgpulpi 'jxgtukqp'3=pqv'r ggt'tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-58" *j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu03373; 20Rtugpvvf 'Lwn'47.'4247

[Crr rlec vqp'qh'c'S wrksc vkg'Tkumlphqto gf.'Rgthqto cpeg/Dcugf'Crr tqcej 'hqt'vj g'O CTXGN' O letqtgccevt'c'v'j g'Kcj q'P c vqpcn'Ncdqtcvt {'](#)

Ucpf g'WOC'tkumlphqto gf.'hco gy qtnhqt'b cpci lpi 'pwengt'hckk{'ugewtk{'tkumu'jxgtukqp'3=pqv'r ggt' tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-52" *j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu03373990Rtugpvvf 'Lwp'49.'4247

[Risk-informing: When, where, and how to Start](#)

J ctngo c'O.'Mcj p'U'c'pf 'Ktcej ko 'KOTkumlphqto lpi <'Yj gp.'y j gtg.'c'pf'j qy 'vq'Uctv'jxgtukqp'3=pqv'r ggt'tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-43" *j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu03373930Rtugpvvf 'Oc {'49.'42470

[Risk-informed, performance-based design approaches for enhanced safety and reliability in new nuclear](#)

Co leq'ROTKumlphqto gf.'r gthqto cpeg/dcugf'f guki p'crr tqcej gu'hqt'gpj cpegf'uchgv{'c'pf' tgnkdkt{'lp'pgy 'pwengt'jxgtukqp'3=pqv'r ggt'tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-39" *j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu033738; 0Rtugpvvf 'Oc {'4.'42470

[Risk-Informed Performance-Based \(RIPB\) design methods for external hazards: Application of the Licensing Modernization Project \(LMP\) Criteria](#)

I tcpv'HHOTkumlphqto gf.'Rgthqto cpeg/Dcugf '*TRD'F guki p'b gy qf u'hqt'gzvgtpcn'j c| ctf u<' Crr rlec vqp'qh'v'j g'Negpulpi 'O qf gtpk c vqp'Rtqlgev'NOR'Etkgtk'jxgtukqp'3=pqv'r ggt'tgxly gf _0P wenUekVgej pqrQr gp' Tgu'4247.'5-37" *j wr u4lf qkqti 132043; 77lpwenekgej pqr gptgu03373890Rtugpvvf 'Cr tld'6.'42470

EPRI research on risk metrics for advanced reactors

Vj qtpudwt {"G0GRTKtuguctej "qp"tkunb gvklu"ht"cfxcpegf"tgcevqtu"}xgtukqp"3"pqv'r ggt"
tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4247."5-34"
*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373860+0Rtgugpvf "Hgdwtct{"4: ."4247

Vj g"Uchgv{/p/Fgukip"UF+"b gvj qfqm { Cu"err rlgf"vq"cfxcpegf"duukqp'r tqlgew"("dg{qpf
Mcj p"U"cpf"J ctngo c"O0Vj g"Uchgv{/p/Fgukip"UF+"b gvj qfqm { Cu"err rlgf"vq"cfxcpegf"
duukqp'r tqlgew"("dg{qpf"xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."4-92"
*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373740+0Rtgugpvf "Qevdgt"47."42460

TKRD'f guki p'y kj 'CUO GRUF/3

J kmT0TKRD'f guki p'y kj 'CUO GRUF/3"xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"
4246."4-89"*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373730+0Rtgugpvf "Ugr vgo dgt"
49."42460

CP U'Ego o wpk{/qh'Rtceveg<Tkunlphqto lpi "eqf gu"cpf"uvcpcfctfu
Hego ktg"LOCP U'Ego o wpk{/qh'Rtceveg<Tkunlphqto lpi "eqf gu"cpf"uvcpcfctfu"xgtukqp"3"pqv'
r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."4-87"*j wr u<lfqlqti 132043; 77l
pwenekgej pqmr gptgu03373720+0Rtgugpvf "Cwi wuv"52."42460

C'tkunlphqto gf "gpxktqpo gpwenr tqeguu"ht"b letqtgcevqtu

[cpi "E0C'tkunlphqto gf "gpxktqpo gpwenr tqeguu"ht"b letqtgcevqtu"}xgtukqp"3"pqv'r ggt"tgxlgy gf _0'
P wenUekVgej pqnQr gp"Tgu"4246."4-79"*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu0
33373680+0Rtgugpvf "Lwpg"4: ."42460

Yj gtg'ku"vj g"RD'lp"TRD'AC'uj ct lpi "qh'r gtur gevkgu//b qtg"f kiewuukqp"vj cp'r tgu gpwvqp
Hcpqxlej "T'cpf"Mcfo dKP R0Y j gtg'ku"vj g"RD'lp"TRD'AC'uj ct lpi "qh'r gtur gevkgu//b qtg"
f kiewuukqp"vj cp'r tgu gpwvqp"}xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."
4-74"*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373650+0Rtgugpvf "Oc {"53."42460

Pgzv'uvgr u"qp"32"EHI'r ctv"75<W f cvgu"qp"fgxgmr lpi "c"pgy "tgi wvqt {"htco gy qtnlht"cfxcpegf"
tgcevqtu"

Yj kg"R0P gzv'uvgr u"qp"32"EHI'r ctv"75<W f cvgu"qp"fgxgmr lpi "c"pgy "tgi wvqt {"htco gy qtnlht"
cfxcpegf"tgcevqtu"}xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."4-62"
*ukf gu+*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373580+0Rtgugpvf "O ctej "4: ."42460

Negpulpi "b qf gtpk cvqp'r tqlgev C'u{uvgo u"gni lpggtlpi "err tqcej "vq"TRD'f guki p"uchgv{"cpf"
negpulpi "

Ycmeg"G0Negpulpi "b qf gtpk cvqp'r tqlgev C'u{uvgo u"gni lpggtlpi "err tqcej "vq"TRD'f guki p"
uchgv{"cpf"negpulpi"}xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."4-57"
*ukf gu+*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373540+0Rtgugpvf "Qevdgt"52."
42420

Vgej pqm {/lpnwukg"lo r decvqpu"qh"CP U/5205."NY T'tkunlphqto gf."r gthqto cpeg/dcugf"f guki p-
Mcfo dKP R0Vgej pqm {/lpnwukg"lo r decvqpu"qh"CP U/5205."NY T'tkunlphqto gf."r gthqto cpeg/
dcugf"f guki p-"}xgtukqp"3"pqv'r ggt"tgxlgy gf _0P wenUekVgej pqnQr gp"Tgu"4246."4-54"
*j wr u<lfqlqti 132043; 77lpwenekgej pqmr gptgu03373520+0Rtgugpvf "Hgdwtct{"45."42460

Fgxgmr o gpv'qh'c'tkumlphqto gf'cpf'r gthqto cpeg/dcugf'uchgv{'ecug'hqt'VgttcRqy gt u'O qngp"
Ej mtkf g'Tgcevt'Gzr gtlk gpv'O ETG"

Ej kuj qm 'DO OFgxgmr o gpv'qh'c'tkumlphqto gf'cpf'r gthqto cpeg/dcugf'uchgv{'ecug'hqt"
VgttcRqy gt u'O qngp'Ej mtkf g'Tgcevt'Gzr gtlk gpv'O ETG"jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'
UekVgej pqrQr gp'Tgu"4246.4-53 *urkf gu+"j wr u4lf qklti 132043; 77lpwemekgej pqmr gptgu0
333734; 0Rtgugpvf'Lcpwct{'48."42460

Ego o qf kfcvqp'qh'cfxcpegf'cpf'o letq'tgcevtu<Cp'lxguvf'ekkl'gpi kpggt u'r gtur gevkg
Yj kvcngt'C0Ego o qf kfcvqp'qh'cfxcpegf'cpf'o letq'tgcevtu<Cp'lxguvf'ekkl'gpi kpggt u"
r gtur gevkg'jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-52 *urkf gu+"
*j wr u4lf qklti 132043; 77lpwemekgej pqmr gptgu0333734; 0Rtgugpvf'Qevdgt'49."42450

Uchgv{'cuuguuo gpv'cpf'utcvgi {'wulpi 'c'tkumlphqto gf'errtqcej 'hqt'vj g'DY TZ/522
J gppgng'F0Uchgv{'cuuguuo gpv'cpf'utcvgi {'wulpi 'c'tkumlphqto gf'errtqcej 'hqt'vj g'DY TZ/522"
jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-4; *urkf gu+"j wr u4lf qklti 1
32043; 77lpwemekgej pqmr gptgu033373490Rtgugpvf'Ugr vgo dgt'4; ."42450

Dgpgdw'qh'cfqr vqp'qh'TRD'errtqcej gu'hqt'qr gtcvpi 'tgcevtu)'degpulpi 'cpf'uwpcftfu
Ncy tgepg'U'cpf'Mfco dKp R0Dgpgdw'qh'cfqr vqp'qh'TRD'errtqcej gu'hqt'qr gtcvpi 'tgcevtu)'
degpulpi 'cpf'uwpcftfu'jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-4: "
*urkf gu+"j wr u4lf qklti 132043; 77lpwemekgej pqmr gptgu033373480Rtgugpvf'Cwi wuv'47."
42450

Ns wkf'hwgrf'tgcevtu<Vj g'dgpgdw'qh'c'TRD'errtqcej
Oqpgi j cp'F0Ns wkf'hwgrf'tgcevtu<Vj g'dgpgdw'qh'c'TRD'errtqcej "jxgtulqp"3-ppv'r ggt"
tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-49 *urkf gu+"j wr u4lf qklti 132043; 771
pwenekgej pqmr gptgu033373470Rtgugpvf'Lwn'4: ."42450

Kvtqf wevqp'v'CUO G'ugevqp'ZK'f kklqp'4<Tgrcdkx{'cpf'kvgi tkv{'O cpci go gpv'TIO +
Tqdgwu'CV0Kvtqf wevqp'v'CUO G'ugevqp'ZK'f kklqp'4<Tgrcdkx{'cpf'kvgi tkv{'O cpci go gpv'
*TIO +jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-48 *j wr u4lf qklti 1
32043; 77lpwemekgej pqmr gptgu033373460Rtgugpvf'O c{'48."42450

Cr r deevqp'qh'qdlgevkgu/f tkgp'cuuwtepeg'ecugu'v'u{uvgo 'f gxgmr o gpv'lp'cp'gxqrlpi "
ces wuklqp'o qf gn
[qwpi dmqf 'T0Cr r deevqp'qh'Qdlgevkgu/F tkgp'Cuuwtepeg'Ecugu'v'U{uvgo 'Fgxgmr o gpv'lp'cp"
Gxqrlpi 'Ces wuklqp'O qf gn'jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'UekVgej pqrQr gp'Tgu"4246."4-47"
*urkf gu+"j wr u4lf qklti 132043; 77lpwemekgej pqmr gptgu033373450Rtgugpvf'Lcpwct{'49."
42450

TRD'cur gew'lp'r ctv'75'f tch'twg'r cenxi g
Tgemg{'Y0TRD'cur gew'lp'r ctv'75'f tch'twg'r cenxi g'jxgtulqp"3-ppv'r ggt'tgxly gf _OP wen'Uek'
Vgej pqrQr gp'Tgu"4246."4-45 *j wr u4lf qklti 132043; 77lpwemekgej pqmr gptgu033373440R
Rtgugpvf'Qevdgt'4: ."42440

Rqrle{'ej cmgpi gu'qh'vgej pqmi {'lpenwukg.'tkumlphqto gf.'r gthqto cpeg/dcugf'tgi wv vqp

Oci twf gt"UOP TE"uwhh'gZR gtlgpeg'y kj "cf xcpegf'tgcevqt'xgpf qtu"cr r n'lp'i "TRD'r tlpkr ngu"
]xgtukqp"3-Þqv'r ggt'tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-35"*j wr u<1lf qkQti 132043; 771
pweniekgej pqrRr gptgu03373340-0Rtgugpvf 'Cr tkl52."42430'

TRD'lp'CNCTC

J c {gu"TD0TRD'lp'CNCTC"]xgtukqp"3-Þqv'r ggt'tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-34"
*j wr u<1lf qkQti 132043; 771pweniekgej pqrRr gptgu03373330-0Rtgugpvf 'O ctej "48."42430

Vj g'pgeguuk'q'q'h'u{uvgO u'gpi kpggtlpi 'hqt'pwerget'r qy gt'f gr m {o gpv

Y gngt'MVj g'P geGuuk'q'q'h'U{uvgO u'Gpi kpggtlpi 'hqt'P werget'Rqy gt'F gr m {o gpv]xgtukqp"3-Þqv'r
r ggt'tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-33"*j wr u<1lf qkQti 132043; 771
pweniekgej pqrRr gptgu03373320-0Rtgugpvf 'Hgdwtct {'48."42430

CP U/4204'y tklpi 'i tqwr <Qwt'gZR gtlgpeg'cpf 'Hggf dcm

Mwuej 'L0CP U/4204'y tklpi 'i tqwr <Qwt'gZR gtlgpeg'cpf Hggf dcm]xgtukqp"3-Þqv'r ggt'tgxlgY gf _O'
P wenUekVgej pqrQr gp'Tgu"4246."4-32"*j wr u<1lf qkQti 132043; 771pweniekgej pqrRr gptgu0
333732; 0-0Rtgugpvf 'Lcpwt {'4; ."42430

QxgtxlgY 'cpf 'uvcwu<CUO Gu'r Rcpv'u{uvgO u'f guki p'Ucpcf ctf

J knt0QxgtxlgY 'cpf 'Uvcwu<CUO Gu'Rcpv'U{uvgO u'F guki p'Ucpcf ctf"]xgtukqp"3-Þqv'r ggt"
tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-3"*j wr u<1lf qkQti 132043; 771
pweniekgej pqrRr gptgu033732; 0-0Rtgugpvf 'Ugr vgo dgt"47."42420'

RIPB design and licensing lessons learned

Dtkvqn'U0TRD'f guki p'cpf 'Hegpulpi 'hguuqpu'gctpgf "]xgtukqp"3-Þqv'r ggt'tgxlgY gf _OP wenUekVgej pqr'
Qr gp'Tgu"4247."5-9"*j wr u<1lf qkQti 132043; 771pweniekgej pqrRr gptgu03373850-0Rtgugpvf 'Lwn' "
53."42420'

Tgegpv'f gXgmRr o gpw'lp"TRD'o gYj qf u'hqt'ugkuo le'f guki p

Ej qmuj kP E0Tgegpv'f gXgmRr o gpw'lp"TRD'o gYj qf u'hqt'ugkuo le'f guki p"]xgtukqp"3-Þqv'r ggt"
tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-3"*j wr u<1lf qkQti 132043; 771
pweniekgej pqrRr gptgu03373290-0Rtgugpvf 'Lwpg"48."42420'

K'vj g'P TE u'tgcevqt'qxgtuki j v'r tqeguu"TRDA

Mf co dkP R0K'vj g'P TE u'tgcevqt'Qxgtuki j v'Rtqeguu"TRDA"]xgtukqp"3-Þqv'r ggt'tgxlgY gf _OP wen'
UekVgej pqrQr gp'Tgu"4246."4-9"*j wr u<1lf qkQti 132043; 771pweniekgej pqrRr gptgu03373280-0'
Rtgugpvf 'Cr tkl46."42420

K r qtwcpeg'q'h'u{uvgO u'gpi kpggtlpi "v'uwr r qtv'tkumlphqto gf'r gthqto cpeg/dcugf'b gYj qf u

Y gngt'M0K r qtwcpeg'q'h'u{uvgO u'gpi kpggtlpi v'uwr r qtv'tkumlphqto gf'r gthqto cpeg/dcugf "
o gYj qf u"]xgtukqp"3-Þqv'r ggt'tgxlgY gf _OP wenUekVgej pqrQr gp'Tgu"4246."4-8"
*j wr u<1lf qkQti 132043; 771pweniekgej pqrRr gptgu03373270-0Rtgugpvf 'Hgdwtct {'4: ."42420'

6/11/25