



POLICY ISSUE

(Notation Vote)

(U) DATE: July 30, 2020 SECY-20-0070

(U) FOR: The Commissioners

(U) FROM: Margaret M. Doane
Executive Director for Operations

(U) SUBJECT: TECHNICAL EVALUATION OF THE SECURITY BOUNDING TIME
CONCEPT FOR OPERATING NUCLEAR POWER PLANTS

(U) PURPOSE:

(U) The purpose of this paper is to present the staff's approach for crediting operator actions, including the use of FLEX¹ equipment, and law enforcement response at operating nuclear power plants (NPPs) in response to Staff Requirements Memorandum (SRM)-SECY-17-0100.² The staff's approach not only addresses how credit may be considered within the force-on-force (FOF) inspection program, but allows licensees to make changes to their protective strategies. The staff's approach is twofold and includes a commitment and options for Commission consideration. First, the staff has committed to implement a new concept, "Reasonable Assurance of Protection Time" (RAPT), which recognizes the existing layers of protection available to sites along with how the safety and security of the site would evolve over time following initiation of an attack, in a revision to existing guidance. Second, the staff provides options for the Commission's consideration on whether and how to implement a site-specific security bounding time (SBT), a concept initially proposed by industry. This paper presents a

(U) CONTACTS: Gary Purdy, NSIR/DPCP
(301) 287-3629

Rebecca Richardson, NSIR/DSO
(301) 415-3301

¹ (U) Diverse and flexible coping strategy commonly referred to as FLEX.

² (U) SRM-SECY-17-0100, "Security Baseline Inspection Program Assessment Results and Recommendations for Program Efficiencies," dated October 9, 2018 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML18283A072). Other aspects of SRM-SECY-17-0100 are addressed in COMSECY-19-0006, "Revised Security Inspection Program Framework in Response to SRM-17-0100," dated June 6, 2019 (ADAMS Accession No. ML19038A485).

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(U) more holistic approach than that presented in SECY-19-0055,³ which was limited in its scope of recommendations to the selection of scenarios for FOF inspections. Accordingly, the staff withdrew SECY-19-0055 to facilitate the Commission's consideration of the broader policy approaches presented in this paper. In addition, the paper provides the semiannual update of the status of the Integrated Response Program (WITS 201300108, see Enclosure 5).

(U) SUMMARY:

(U) In this paper, the staff presents a risk-informed concept for protecting against the design basis threat (DBT), as defined in Section 73.1 of Title 10 of the *Code of Federal Regulations* (10 CFR), that considers the range of capabilities and assets available to licensees that, taken together, provide reasonable assurance⁴ that licensees can maintain adequate physical protection of their sites against the DBT. The U.S. Nuclear Regulatory Commission (NRC) has held, and will continue to hold, licensees responsible for protecting against the DBT at all times. The commitment and recommendations provided in this paper, if implemented, would incentivize enhanced interactions and coordination between licensees and law enforcement, and allow licensees to use risk insights to focus their protective strategies where they are most needed and effective. Specifically, this paper introduces two concepts, RAPT and a site-specific SBT, both of which leverage operator actions, including the use of FLEX equipment, recall of off-duty site personnel, and response by local, State, and/or Federal law enforcement to support the site's protective strategy.

(U) The RAPT reflects the staff's determination that a licensee's current physical protection program meets the general performance objective of 10 CFR 73.55(b)(1) to provide reasonable assurance that "activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety" when that program is capable of independently defending against the DBT for a timeframe of at least 8 hours (the formulation of which is discussed later in the paper). After the RAPT, there is a reduced risk profile and licensees can reasonably expect to have additional resources available, such as law enforcement and/or recalled off-duty personnel, to provide support for the licensee to continue to defend against the DBT. Although a licensee remains bound by regulation to continue to protect its site following the RAPT, the staff recognizes that its response to an attack will likely be augmented with these additional resources. The RAPT will enable licensees to refine their protective strategies in a risk-informed manner. Industry stakeholders have expressed that the RAPT concept adds a greater level of regulatory clarity because it provides a consistent framework for target set development. While implementation of the RAPT might require some revisions to site documentation, it does not require any additional commitments beyond the current regulatory framework. The staff commits to revise

³ (U) SECY-19-0055, "Crediting Options for Operator Actions and Law Enforcement Response," dated May 23, 2019 (ADAMS Accession No. ML19080A274).

⁴ (U) The general performance objective of 10 CFR 73.55(b)(1) is to provide "high assurance that activities involving special nuclear material are not inimical to the common defense and security and do not constitute an unreasonable risk to the public health and safety." In SRM-SECY-16-0073, Options and Recommendations for the Force-on-Force Inspection Program in Response to SRM-SECY-14-0088, the Commission stated that "the concept of 'high assurance' of adequate protection found in our security regulations is equivalent to 'reasonable assurance' when it comes to determining what level of regulation is appropriate" (ADAMS Accession No. ML16279A345).

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(U) Regulatory Guide (RG) 5.76⁵ to incorporate RAPT as an acceptable method for demonstrating compliance with the NRC's physical protection regulations for operating NPPs and to provide guidance to licensees for RAPT implementation (see "Commitment" on page 19).

(U) Separate from the RAPT, the staff developed two policy options for Commission consideration that would allow licensees to voluntarily develop site-specific SBTs and further refine protective strategies by increasing law enforcement coordination, enhancing use of FLEX equipment, or by implementing robust recall programs for licensee personnel. The staff's options include consideration of the site-specific SBT concept in a recent Nuclear Energy Institute (NEI) white paper, which is focused on law enforcement assistance in the owner-controlled area.⁶ The staff, in its evaluation of the white paper, determined that the proposed NEI methodology presents a realistic set of planning considerations for recognizing law enforcement assistance (see Enclosure 1, Additional Background and Technical Discussion). However, the staff concluded that the development and application of an SBT concept should not be based solely on law enforcement as was presented in the NEI white paper, but rather should be inclusive of additional safety and security assets available to licensees to improve flexibility in implementation. Additionally, the staff identified some regulatory challenges associated with allowing licensees to change their protective strategies based on the contributions of law enforcement. Working extensively with internal and external stakeholders, the staff identified two options (referred to as Policy Options) for Commission consideration, with varying levels of regulatory risk (see Enclosure 6, Legal Analysis):

1. (U) reinterpret existing security regulations through an interpretive rule to allow for a site-specific SBT; or
2. (U) revise the regulations in 10 CFR Part 73 to enable NPP licensees to adopt a site-specific SBT.

(U) These options are distinct from the RAPT, in that each option would change policy to allow law enforcement assistance to be used, along with other factors, to justify changes to licensee protective strategies. The staff is also offering the Commission two options of ways for licensees to implement Policy Option 1. Referred to as Implementation Options, they are as follows:

- a. (U) utilize the existing site/fleet process for assessing the impact of changes to the physical security program; or
- b. (U) utilize the license amendment request process pursuant to 10 CFR 73.55(r), Alternative measures.

(U) The staff recommends that the Commission approve Policy Option 1 and Implementation Option 1(b). Finally, the staff recommends that the Commission approve the staff's request to stop providing semi-annual updates on the Integrated Response Program, as required by

⁵ (U) RG 5.76, "Physical Protection Programs at Nuclear Power Reactors (Safeguards Information)," dated July 2009 (Safeguards Lan and Electronic Safe number NS105997 (non-public)).

⁶ (U) NEI white paper, "Determination of a Site-Specific Security Bounding Time," dated September 2019 (ADAMS Accession No. ML19267A020 (publicly available), ADAMS Accession No. ML19263D886 (non-publicly available)).

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(U) SRM-COMSECY-13-0005,⁷ to focus the staff's efforts on implementation of the concepts in this paper (see Enclosure 5, Integrated Response Program: History, Status, and Lessons Learned).

(U) BACKGROUND:

(U) NRC regulations for NPP security provide that licensees are responsible for protecting the facility against the DBT. Specifically, in accordance with 10 CFR 73.55(b)(3)(i), the physical protection program must "[e]nsure that the capabilities to detect, assess, interdict, and neutralize threats up to and including [the DBT], are maintained at all times." The licensee must "establish and maintain" the personnel who implement the physical protection program, including the armed responders required to interdict and neutralize the DBT, and ensure that these personnel are trained and qualified in accordance with NRC requirements (10 CFR paragraphs 73.55(d)(3) and (k)(1)). The regulations address law enforcement by requiring licensees to maintain agreements with law enforcement agencies "to include *estimated* [emphasis added] response times and capabilities," but only "[t]o the extent practicable" (10 CFR 73.55(k)(9)). Because law enforcement agencies are outside the NRC's regulatory jurisdiction, the NRC lacks the authority to compel these agencies to enter into agreements with licensees or to respond within specific timelines.⁸

(U) In the DBT final rule (72 FR 12705; March 19, 2007), the Commission stated that "[t]he DBT rule reflects the Commission's determination of the composite set of adversary features against which private security forces should reasonably have to defend (72 FR 12708)." In defining the DBT in this way, the Commission recognized that "[t]he defense of our nation's critical infrastructure is a shared responsibility between the NRC, the Department of Defense, the Department of Homeland Security, Federal and State law enforcement and other Federal agencies (72 FR 12714)." The Commission further explained the complementary roles of the licensee and law enforcement: "The Commission is confident that a licensee's security force would respond to any threat no matter the size or capabilities that may present itself. The Commission expects that licensees and State and Federal authorities will use whatever resources are necessary in response to both DBT and beyond-DBT events (72 FR 12714)." However, in response to concerns about the time required for outside help to arrive during an attack, the Commission stated that "[t]he capabilities of off-site responders are beyond the scope of [the DBT rule]" (72 FR 12720). Similarly, in the Statement of Considerations for the Power Reactor Security Requirements final rule (74 FR 13926; March 27, 2009), the Commission stated that "a licensee's ability to defend against the DBT of radiological sabotage is not dependent on the availability of offsite responders" (74 FR 13940). Consistent with these views, the NRC has, to date, required licensees to design their physical protection strategies to protect against the DBT at all times without consideration of support from law enforcement.

⁷ (U) COMSECY-13-0005, "Integrated Response at Nuclear Power Plants," dated February 7, 2013 (ADAMS Accession No. ML12305A419, not publicly available).

⁸ (U) In the Statement of Considerations for the 2009 Power Reactor Security Rule, the Commission acknowledged that "in some cases a local, State, or Federal law enforcement agency cannot or will not enter into a written agreement with a licensee, and in such cases the Commission's expectation is that the licensee will make a reasonable effort to pursue liaison with these agencies to the extent practicable and that this liaison is documented" (74 FR 13945).

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(U) In response to the lessons learned at Fukushima and the NRC's Near-Term Task Force Recommendations, the NRC issued Order, Enforcement Action (EA) 12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events" (ADAMS Accession No. ML 12054A735). The NRC later endorsed the industry proposed safety strategy described in NEI 12-06, "Diverse and Flexible Coping Strategies," or "FLEX" (ADAMS Accession No. ML 12221A205). All licensees have currently committed to follow NEI 12-06 to meet the requirements of EA 12-049. FLEX strategies consist of an initial phase using installed plant equipment and resources; a transition phase using onsite, in some cases portable, FLEX equipment; and a final phase obtaining sufficient offsite resources to sustain the strategy indefinitely. The intent of FLEX equipment is to maintain long-term core and spent fuel cooling and containment integrity. Most FLEX equipment requires an operator action to align equipment for use. Operator actions within a target set are actions performed by licensee personnel to prevent radiological sabotage in response to an adversary attack. Actions that mitigate the effects of radiological sabotage are not considered target set elements. As discussed in SECY-17-0100, "Security Baseline Inspection Program Assessment Results and Recommendations for Program Efficiencies," dated October 4, 2017 (ADAMS Accession No. ML 17223A279), the current guidance in RG 5.81, "Target Set Identification and Development for Nuclear Power Reactors," is to include operator actions in target sets if they meet the following criteria: (1) sufficient time is available to implement actions; (2) environmental conditions allow access; (3) adversary interference is precluded; (4) equipment is available and ready for use; (5) approved procedures exist; and (6) training is conducted on the existing procedures under conditions similar to the scenarios assumed.

(U) In SRM-SECY-17-0100, the Commission directed the staff to develop "recommendations for providing credit for a broader set of operator actions, including the use of FLEX equipment, and providing credit for response by local, State, and Federal law enforcement in our security inspection program." The Commission also directed that the staff "should take into consideration that the NRC has already codified its recognition of the reality that in an actual emergency, State and local government officials will exercise their best efforts to protect the health and safety of the public in 10 CFR 50.47(c)(1)(iii)(B)."

(U) DISCUSSION:

(U) The NRC's regulatory framework for physical security of NPPs provides for many layers of protection that form the basis of licensees' robust and effective protective strategies to defend against the DBT. These programs are routinely tested and are augmented and complemented by factors such as coordination with law enforcement and the potential use of recalled off-duty personnel. In addition, licensees' safety programs include equipment relied on for the strategies and guidelines for beyond-design-basis (BDB) event response.

(U) The staff used this Commission paper as a pilot for the *Be riskSMART* framework – a framework that was developed as part of the Office of the Executive Director for Operations (OEDO) transformation initiative for accepting risk in decision-making.⁹ This framework supports the NRC's vision of being a modern, risk-informed regulator by enabling staff to accept well-managed risks in NRC's decision-making without compromising the agency's mission. Throughout this paper, the staff highlights where the *Be riskSMART* framework was applied to

⁹ (U) More information on the OEDO transformation initiative and the *Be riskSMART* framework can be found at <https://usnrc.sharepoint.com/teams/FutureNRC/SitePages/ACCEPT-RISK.aspx>.

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(U) help guide the staff's assessment of the challenges (what can go wrong/right? what are the consequences? how likely is it?) while formulating the commitment and recommendations addressed in the paper. For example, each of the staff's recommendations for providing additional credit for elements such as law enforcement response and FLEX equipment consider factors that may impact the likelihood and consequences of an attack. Not only would the risk of radiological sabotage decrease over time following the initiation of an attack due to core cooling (i.e., reactor scram upon recognition of attack), the DBT adversary capabilities are also expected to decrease over the course of an attack due to personnel attrition and/or resource depletion.

(U) Reasonable Assurance of Protection Time

(U) The NRC's regulations require a licensee to "[e]nsure that the capabilities to detect, assess, interdict, and neutralize threats up to and including the [DBT] of radiological sabotage ... are maintained at all times." External stakeholders have questioned whether this means that licensees should analyze and identify target sets based on an indefinite timeframe (i.e., combinations of equipment that could lead to core damage in 10, 12, 16 hours, or beyond). This has caused uncertainty during past inspections and enforcement discussions. In response, staff developed the RAPT concept to consider the many existing layers of protection that would provide reasonable assurance that the licensee can independently defend against the DBT. The RAPT clarifies the period of time that licensees should consider when analyzing their target sets within the current regulatory framework. After the RAPT (i.e., 8 hours from recognition of an attack), the staff has determined that it is reasonable to assume that licensees will have additional resources, such as law enforcement and/or recalled off-duty personnel, to support the licensee's continued defense against the DBT (see "Basis for an 8-hour RAPT," below). The staff will include the RAPT concept in a revision to RG 5.76, which staff plans to issue by October 2020.

(U) The identification of complete and accurate target sets is the primary basis for the development of the site's protective strategy.¹⁰ Implementation of the RAPT would continue to require a licensee to analyze safety systems to identify target sets as required in 10 CFR 73.55(b)(4). Consistent with current guidance in RG 5.81, the identification of target sets should consider, among other factors, every possible location to disable a target set element (i.e., all accessible locations of a piping or cable run), the target set element's accessibility, and the adversary's ability to identify the target set element. There are two scenarios in a licensee's target set development process where the RAPT provides licensees additional flexibility that is not afforded under today's program. The first scenario, and the one with the widest application, is the ability to take credit for operator actions that could be performed after the RAPT, and which are not credited under the current program. These operator actions include those that could be accomplished with the support of additional security assistance from law enforcement—such as utilizing operators to move FLEX equipment into place. Including FLEX

¹⁰ (U) As stated in *Federal Register* Volume 74, Number 58 (Friday, March 27, 2009), target sets are a minimum combination of equipment or operator actions which, if prevented from performing their intended safety function or prevented from being accomplished, would likely result in significant core damage (e.g., non-incipient, non-localized fuel melting, and/or core destruction) or a loss of coolant and exposure of spent fuel barring extraordinary actions by plant operators.

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(U) equipment in a target set means that an element has been added to the set.¹¹ As a result, a licensee creates a more challenging target set combination because the number of elements an adversary would be forced to render unavailable to operators has increased in order to achieve radiological sabotage. The second scenario, which has limited application, is one where the licensee would be able to screen out some target set equipment (i.e., target set elements) if the time to core damage (TTCD) associated with that equipment extends beyond 8 hours.¹² Whereas under today's program, licensees can only screen out target set elements as unachievable if they are beyond the capability of the DBT, independent of the protective strategy. This means that licensees include within their target sets some pieces of equipment that, if removed from operation in combination with other equipment in the target set, cause delayed functional failure that could lead to core damage across an extended timeframe. This equipment can prove challenging to protect and under today's program a licensee may develop a physical protection strategy that simply assumes the loss of this target set element. However, the licensee is still required to treat this equipment as a target set element and devote resources to meet the regulations applicable to target set equipment (e.g., insider mitigation patrols under 10 CFR 73.55(i)(5)(vi)). For example, most emergency AC systems have a long-term dependency on a fuel transfer system. Under today's target set identification process, the fuel transfer system would be included as a "sub-element" of the emergency AC system. Using the concepts in this paper, the licensee could credit its ability to utilize operators to move equipment in place following the RAPT to compensate for the loss of this element and therefore remove this element from the target set. Under the RAPT for this example, if (1) the emergency AC diesel generators have enough fuel in local tanks to provide power and delay core damage for greater than 8 hours; and (2) operators have actions available to avoid core damage, then the fuel transfer system sub-element may be removed from any target sets that include the emergency AC system.¹³

(U) To further represent these two scenarios, the staff has provided the following examples:

(U) In scenario one, a target set includes 3 means of preventing core damage, A, B, and C. If the TTCD after an adversary disables A, B, and C is such that off-site assistance may facilitate operator actions previously uncredited, a licensee may credit an additional means, D, yielding

¹¹ (U) When specific FLEX equipment is identified as a target set element, it is analyzed in the physical protection program in accordance with 10 CFR 73.55(b)(4).

¹² (U) The staff estimates that based on current licensee TTCD calculations, an 8-hour RAPT only allows a small percentage of target sets to be changed.

¹³



[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

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(U) target set A, B, C, and D (and making A, B, C no longer a target set). Functions A, B, and C are in target sets and still protected regardless of the TTCD.

(U) In scenario two, a target set includes 3 means of preventing core damage, X, Y, and Z. If there are three means of disabling Y: Y1, Y2, and Y3, and means Y2 takes a long time to cause core damage (i.e., core damage would not occur prior to the RAPT), the licensee may remove those combinations that include Y2. Functions X, Y, and Z are still included in target sets and still protected regardless of the TTCD.

(U) This approach directs the licensee's focus on protecting the more risk-significant target set elements: (1) the principal (front-line) systems which are defined as those systems needed for maintaining reactor coolant inventory following a loss of coolant accident, for decay heat removal following a reactor trip or loss of main feedwater, and for providing emergency AC power following a loss of off-site power (e.g., high pressure injection, reactor core isolation cooling/isolation condenser, auxiliary/emergency feedwater), and (2) those supporting systems and components that cause a prompt functional failure leading to core damage. NRC force-on-force inspections will focus on front-line systems and some supporting systems with a prompt functional failure to ensure that the most risk-significant target sets are the focal point for performance testing.

(U) With the implementation of RAPT, licensees must still analyze all target sets and make the documentation available to inspectors, in accordance with the current regulations in 10 CFR 73.55(f). The security baseline inspection program will verify that licensees appropriately applied the RAPT and continue to meet the requirements of 10 CFR 73.55 (including the requirements for analysis of target sets and protection of vital equipment). Any components or systems that are screened out under the RAPT would continue to be identified and documented by the licensee to maintain awareness of the equipment's capability to render the front-line system unusable. Under the RAPT, like the current program, if a licensee fails to identify plant equipment, including nonvital or non-safety-related equipment required to maintain reactor core and spent fuel pool integrity to prevent significant core damage and spent fuel sabotage, then enforcement action could be taken under 10 CFR 73.55(b)(4), which requires licensees to "analyze and identify site-specific conditions, including target sets, that may affect the specific measures needed to implement the requirements of this section and ... account for these conditions in the design of the physical protection program."

(U) In applying the *Be riskSMART* framework, staff identified variations in TTCD calculations across industry. Licensee methods include extrapolating TTCD times from simulator runs, Modular Accident Analysis Program software, and rough calculations. The NRC uses the "Methods for Estimation of Leakages and Consequences of Releases" computer code and standardized plant analysis risk modeling. In addition, the term "core damage" is not defined in regulations. For example, one licensee uses both core peak node temperature greater than or equal to 1,800 degrees Fahrenheit (F) and core exit temperature greater than or equal to 1,200 degrees F for 30 minutes or more as the two conditions to determine the timing of core damage. Both conditions come from the American Society of Mechanical Engineers probabilistic risk assessment (PRA) standard that is endorsed in RG 1.200.¹⁴ Other licensees use conditions such as: (1) uncovering core and heat-up of the reactor core to the point at which prolonged

¹⁴ (U) RG 1.200, Revision 2, An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities, dated March 2009 (ADAMS Accession No. ML090410014).

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(U) oxidation and severe fuel damage are anticipated, and; (2) simulator run to determine time to core failure. The variations in outcomes of TTCD calculations across licensees are driven more by the assumptions and inputs that feed into the calculations than the particular definition of core damage that is used, as exemplified by an equivalent target set at two different boiling water reactors (BWR) being estimated to result in core damage at 15 minutes for one and 10 hours for another. Currently, these variations in TTCD are irrelevant because they do not influence the development of a licensee's physical protection strategy. Practically, the derivation of target set elements have relied on the use of minimum cutsets from plant PRA and have focused on addressing the question: What can go wrong? Thus, the identification of target set elements was not dependent on time, but only on whether a piece of equipment would perform its intended function when called upon and how the element's failure along with the presumed failure of other elements in the target set could lead to core damage. However, in applying the RAPT, time becomes a factor for identifying target sets for the small subset of equipment causing delayed functional failure leading to core damage as discussed above. Nevertheless, regardless of the licensee's TTCD calculation, the front-line systems and those supporting systems causing prompt functional failure leading to core damage will remain in target sets.

(U) Using the *Be riskSMART* framework, the staff assessed the potential challenge that industry could use a longer TTCD, which could result in less protection for some current target set equipment. Staff expects licensees to document TTCD calculations used for target sets using a sound, licensee-established methodology, but recognizes there could be inconsistencies without a standardized method for calculating TTCD. Therefore, the staff is engaging with the operating NPP owner's groups (OG) to revisit the guidance they already have in place, or are developing, for determining TTCD, to minimize the inconsistencies and reduce associated inspection challenges (such as the end-point criteria associated with certain Emergency Action Levels thresholds described in a site emergency plan).¹⁵ Furthermore, staff considered the impacts of the varying definitions of core damage from "non-localized fuel melting and/or core destruction" to the more conservative "localized fuel melt." While one extends TTCD more than the other, in both cases the licensee would be protecting the equipment that maintains the fission-product barriers to protect against the effects of radiological sabotage, albeit with varying levels of conservatism. Overall, while the RAPT allows licensees to change their protective strategies despite variations in licensee calculations of TTCD, licensees are still responsible for identifying which target set elements must be protected to provide reasonable assurance. As previously discussed, the NRC will continue to assess a licensee's physical protection program through the security baseline inspection program which includes performance-based FOF inspections – exercises that provide a realistic test of the licensee's protective strategy. These inspections verify that a licensee's physical

¹⁵ (U) In staff's discussions with industry, two different possible approaches have been identified to date: One approach is for pressurized water reactors (PWR) to use the site-specific core thermocouple temperature value that corresponds to significant in-core superheating of reactor coolant which typically ranges from 1,100 degrees F to 1,200 degrees F. For BWRs, this approach would use any condition that requires entry into Severe Accident Guidelines, the most likely condition being the reactor pressure vessel water level falling below the minimum steam cooling reactor pressure vessel water level. Another approach could be to use an end point criterion of 2,200 degrees F. This value would align with the requirement in 10 CFR 50.46(b)(1), "Peak cladding temperature," which states, "The calculated maximum fuel element cladding temperature shall not exceed 2,200 degrees F." Additionally, during a drop-in meeting in April 2020 and subsequent public meeting in July 2020, the PWR OG discussed an ongoing project to issue a generic guidance document that will promote a consistent methodology for calculating TTCD for target sets. The PWR OG expressed plans to share the results of this project with the BWR OG.

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(U) protection program protects against the DBT of radiological sabotage with reasonable assurance. The staff is further managing these challenges by providing additional guidance for the RAPT to clarify that licensees should maintain physical protection strategies for the front-line systems.

(U) Basis for an 8-hour RAPT

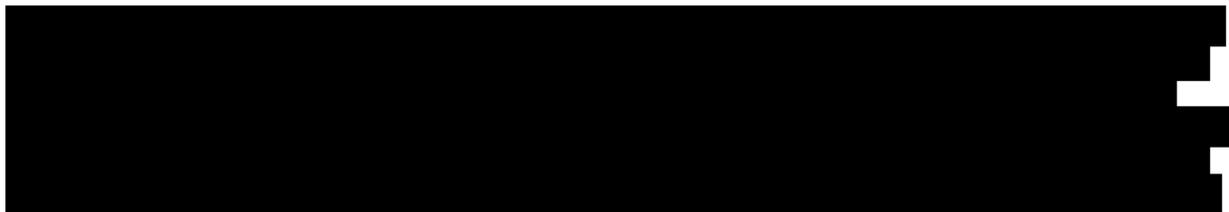
(U) The staff's technical basis for an 8-hour RAPT considered the following factors: decrease in adversary capability over time; requirements for availability of vital equipment; timing of a reactor trip/scram; time required to transition to lower modes; reduction in applicable target sets at lower modes; and existing layers of defense including availability of offsite resources. These factors are based on characteristics of the NRC's existing regulatory framework. Accordingly, a licensee who meets the NRC's current requirements would not need to implement additional commitments in order to take advantage of the flexibility provided by the RAPT. The totality of these factors provides reasonable assurance that the physical protection programs provide the defense-in-depth needed to support the RAPT.

(U) The staff can reasonably conclude that as an attack progresses, the DBT adversary capability will decrease over time due to factors such as personnel attrition and resource depletion. However, due to the uncertainties associated with engagements during combat, it is difficult to determine the survivability of the DBT adversary in terms of a specific number of hours. Therefore, in its evaluation, the staff considered other known factors to identify an appropriate timeframe.

(U) Specifically, assuming vital equipment has not been destroyed or is otherwise unavailable at the time of a reactor trip, that equipment can be used to achieve and maintain hot shutdown (e.g., Mode Four) for a minimum of 8 hours. As stated in NUREG-1178, "Vital Equipment/Area Guidelines Study: Vital Area Committee Report," published February 1988 (ADAMS Accession No. ML19317E685):

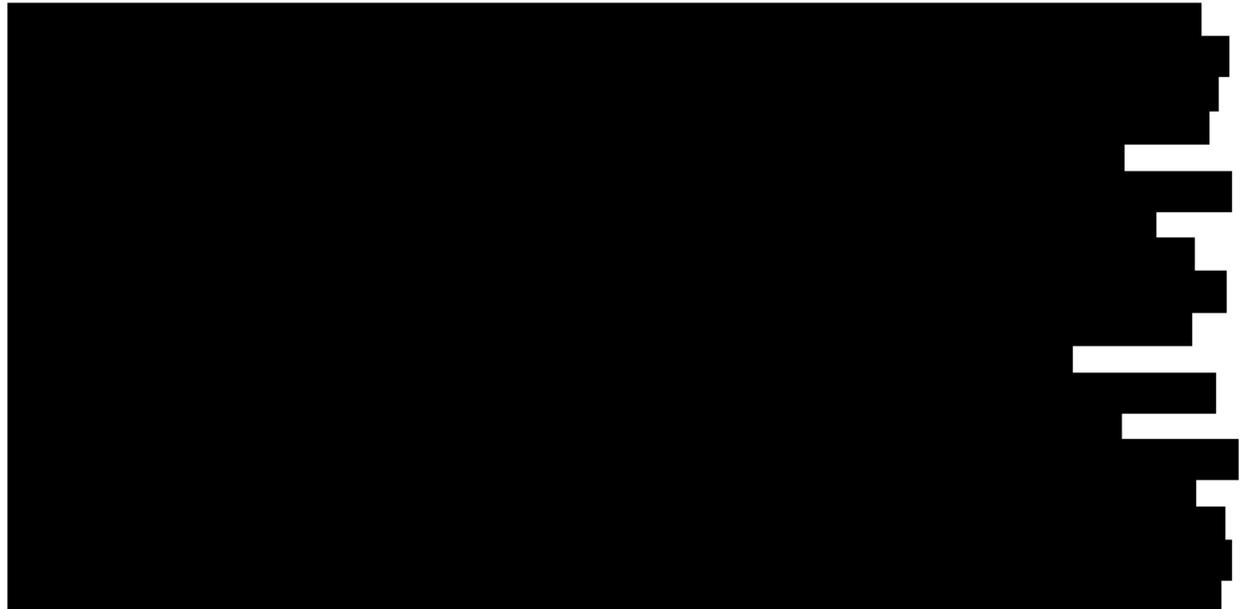
(U) During Mode One (power operation), one train of equipment (with the associated piping, water sources, power supplies, controls, and instrumentation) that provides the capability to perform the functions (reactivity control, decay heat removal, and process monitoring) that are necessary to achieve and maintain hot shutdown for a minimum of 8-hours from the time of reactor trip should be protected as vital. In addition, the major components of the reactor coolant makeup system and associated support equipment necessary to achieve this goal should be protected as vital.

(U) Prior to reaching hot shutdown, the adversary has numerous options for targets to achieve radiological sabotage and the licensee will need to protect these targets as currently required by regulation.





(U) The existing layers of defense in licensees' physical protection programs take into account planning for the availability of offsite resources. NRC's security regulations (10 CFR paragraph 73.55(k)(9), Appendix C to 10 CFR Part 73, II.B.3.d) require licensees to maintain agreements with law enforcement agencies "to the extent practicable," but in practice, all licensees have such agreements in place. Licensees also have processes in place to recall off-duty security and operations personnel (Appendix C to 10 CFR Part 73, II.B.3.e.(ii)). The staff finds it reasonable to expect that offsite resources will be available to support the site beyond the 8-hour RAPT. The staff's holistic approach eliminates challenges associated with determining the survivability of the DBT adversary. That is, it is not important if the DBT adversary can survive more than 8 hours, because by that time, it is expected that the site will have additional resources to assist in precluding adversary interference and taking additional action that can prevent radiological sabotage.



(U) The staff also considered lessons learned from years of security baseline inspections, including NRC- and licensee-conducted FOF inspections, combined with the staff's assessment of law enforcement response capabilities at operating NPPs. On the safety side, licensees' programs include equipment relied on for mitigation strategies and guidelines for BDB event response. Licensees already provide some protective measures for this BDB equipment and, in some cases, include the equipment in their target sets (i.e., some FLEX equipment). The staff determined that it is appropriate when applying the RAPT, to consider the equipment that is used for Emergency Operating Procedures (EOPs) as this is equipment that prevents fuel damage (rather than equipment used to mitigate consequences of fuel damage). This may include equipment for the site-specific integrated use of FLEX Support Guidelines, Station Blackout and Advanced Accident Mitigation equipment,¹⁶ and some equipment for Extensive Damage Mitigation Guidelines. This should not include equipment specific to Severe Accident

¹⁶ (U) Section B.5.b of Interim Compensatory Measures Order EA-02-026, Attachment 2, dated February 25, 2002.

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(U) Mitigation Guidelines, which are meant to manage accident sequences that progress beyond the capacity of the strategies contained in the EOPs.

(U) Using the *Be riskSMART* framework, staff considered that BDB equipment may be located outside the protected area and was designed for BDB event response strategies, not hostile-action events. Often, those licensee personnel assigned to move the equipment located on-site are security officers who may not be available during an event. Additionally, the staff recognizes there is a risk that some equipment relied upon to prevent core damage may not be aligned prior to the 8-hour RAPT (e.g., times range from 15 minutes to 12 hours). The staff notes that operating experience shows FLEX equipment may not be readily available even though the equipment has previously been deemed operable, as recently evidenced by the failure of all five of the FLEX-credited diesel generators and a FLEX backup diesel pump to pass vendor testing at the River Bend Station.¹⁷ This operating experience represents a potential performance deficiency, and such an occurrence would be managed through the enforcement process as was done in this example. In addition, the staff is taking several actions in the areas of risk, licensing, and oversight to assess licensees' implementation of FLEX to ensure the NRC continues to have confidence that FLEX equipment is available if needed. Training on the use of FLEX equipment by licensee staff may be infrequent, may not include consideration of hostile-action scenarios, and may not include hands-on training or evaluation. Training is important because operators performing these functions could be targeted by adversaries during movement to equipment or while attempting to complete the necessary actions at the equipment. The risk of FLEX equipment unavailability or related operator training deficiency is low because the likelihood that a licensee would need to resort to use of FLEX is low—this will only happen if an adversary defeats the licensee's layers of protection and disables the front-line systems. Operating NPPs have robust protective strategies that are frequently improved (e.g., through added layers of protection), and continue to be assessed through the security baseline inspection program. In addition, some licensees currently include FLEX equipment in their target sets, and it is, therefore, considered in development of their protective strategies. This would continue under the RAPT.

(U) Site-specific Security Bounding Time

(U) The SBT builds on the RAPT concept to allow licensees to define site-specific SBTs of less than 8 hours if they demonstrate a sufficient basis, such as an enhanced licensee recall program or enhanced coordination with law enforcement. The staff considered the layers of protection, both safety and security, in its development of the site-specific SBT concept to ensure that the general performance objective of 73.55(b) would continue to be met for those licensees who chose to adopt a site-specific SBT. The staff defines a site-specific SBT as the elapsed amount of time following recognition of an attack (i.e., the initiating event(s)), after which (1) further adversary interference is reasonably assumed to be precluded and (2) additional actions to prevent the adverse effects of radiological sabotage can be taken by licensees. The site-specific SBT can be expressed as the sum of the Adversary Interference Preclusion Time (AIPT) and the Additional Action Time (AAT).

(U) Similar to the approach described in the NEI white paper, the AIPT can be determined using established times for notification, response, planning, and execution by law enforcement.

¹⁷ (U) Management Directive 8.3 Evaluation for Multiple Flex Diesel Generator Failures at River Bend Station, dated November 22, 2019 (ADAMS Accession No. ML19326D110).

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The staff's proposed method would also allow AIPT to be determined by using licensee procedures for recalling off-duty personnel. The staff's definition differs from the definition for (U) SBT in the NEI white paper in that the AAT concept includes possible additional licensee actions (e.g., operator actions such as the use of FLEX). External stakeholders¹⁸ acknowledged that the AAT can vary across target sets and target set elements. These variations can depend on the actions required, the site's strategy, the times to implement the actions (including variations in location of BDB equipment), and the need to assess changing conditions over time.

(U) The staff's proposal would allow licensees to justify a site-specific SBT less than the 8-hour RAPT by conducting a site-specific analysis demonstrating that the licensee's physical protection program would continue to provide reasonable assurance of adequate protection. Specifically, licensees would need to assess three criteria: (1) law enforcement response; (2) equipment relied on for some BDB event response strategies and operator actions; and (3) licensee recall.

(U) Consider, for example, two hypothetical sites, X and Y. Site X has a strong Integrated Response Program and a close physical proximity to law enforcement, which enables timely and effective response (criterion 1). However, site X's timelines for response of recalled off-duty personnel (criterion 3) to the site extend beyond the law enforcement response times. Conversely, site Y, due to its significant distance from law enforcement organizations, has instead strengthened its plans for recall of off-duty security personnel with trained and documented response timelines. Both sites would be eligible to apply a site-specific SBT if timelines resulting from these elements are less than 8 hours because they are utilizing all layers of protection and recognizing the varying levels of response, without relying on a single criterion. Under this approach, NRC staff recognizes that a licensee will have additional resources to assist in precluding adversary interference and taking additional actions that may prevent radiological sabotage. The licensee will then be able to analyze target sets, as done in the RAPT, for which the TTCD extends beyond the established site-specific SBT and document the justification for the removal of a target element within a target set.

(U) The staff considered several ways to evaluate licensees' overall assets and capabilities to justify a site-specific SBT less than 8 hours. In one hypothetical scenario, the staff used the NEI white paper method to determine a site-specific AIPT of 5 hours using the sum of four components associated with law enforcement response. (As mentioned earlier in this paper, the NEI methodology focuses solely on the law enforcement response – criterion 1 identified above.) In another scenario, the staff analyzed whether criterion 3, the recall of off-duty security and operations personnel, could justify a 5-hour AIPT. In both scenarios, at 5 hours following recognition of an attack, the staff assessed that the licensee would be able to perform additional actions to prevent radiological sabotage. However, neither of these scenarios accounts for the time it would take to perform these additional actions to ensure the licensee could prevent the adverse effects of radiological sabotage (e.g., restoring core cooling using FLEX equipment). Applying the staff's definition of a site-specific SBT, additional time (i.e., the AAT) would be added beyond 5 hours to determine the SBT applicable to each target set or component. Enclosure 1 contains details on the staff's rationale for calculating site-specific SBTs.

¹⁸ (U) Following the staff's public meeting on January 23, 2020, and additional discussions with industry through the Nuclear Security Working Group, NEI submitted potential solutions for the staff's consideration on the SBT definition and implementation (ADAMS Accession No. ML20049A018). The staff also participated in a Roundtable Discussion at Dominion on March 4, 2020.



(U) In assessing the use of additional resources, the staff identified that law enforcement and/or recalled off-duty personnel would need sufficient time to assess the situation, plan their actions to support the site, and then execute those actions, including engaging adversaries and/or moving FLEX equipment to prevent radiological sabotage. Additionally, timelines for response by recalled off-duty personnel could be lengthy enough following the recognition of an attack that sites may be challenged to utilize them for support. The risks associated with leveraging off-site resources are managed, in part, based on the NRC's coordination with the Federal Bureau of Investigation (FBI), and the understanding that FBI tactical response teams will respond in a timely manner to terrorist attacks at operating NPPs. Additionally, for licensees who justify a site-specific SBT based on increased coordination with law enforcement, there is an additional benefit as licensees would have an incentive to ensure that responders are prepared to support plant defense. Credit for law enforcement assistance would only be granted when it can be reasonably demonstrated that licensees have coordinated with law enforcement to facilitate a timely and effective response. The staff also identified a challenge associated with recalled off-duty personnel who may not have access to firearms, ammunition, and protective equipment outside the protected area, which would inhibit their ability to respond. This challenge is managed because a licensee who justifies their site-specific SBT will need to demonstrate that off-duty personnel will be effective when they arrive to assist with protecting the site.

(U) OPTIONS:

(U) With respect to the SBT, the staff is proposing two policy options, one of which contains two implementation options for Commission consideration. Under both policy options, a licensee could conduct an analysis to justify a site-specific SBT (less than the 8-hour RAPT), which would afford the licensee greater flexibility in adjusting its protective strategy. A site-specific SBT allows a licensee to apply a shorter time period, if it has program capabilities that meet the general performance objective and requirements of 73.55(b)(1)–(3). If a licensee adopts a site-specific SBT, the staff expects the licensee to document these capabilities and demonstrate how adequate protection of public health and safety is maintained. Enclosure 2, Factors to Consider for Documentation of Criteria, expands on the staff's expectations for licensee documentation, which could include additional licensee commitments. Enclosure 2 also

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(U) explains that the NRC staff finds the NEI white paper to be one acceptable methodology for calculating the AIPT, for a licensee who justifies its site-specific SBT by relying on its enhanced coordination with law enforcement.

(U) The two policy options would allow licensees to consider additional layers of protection, including law enforcement response, to justify a site-specific SBT. The policy options would accomplish this by reinterpreting the existing regulations (Policy Option 1) or by revising the regulations (Policy Option 2). Currently, licensees' physical protection programs do not include credit for law enforcement response to defend against the DBT.¹⁹ Although licensees must document the capabilities of available law enforcement responders, to the extent practicable,²⁰ licensees do not credit this response as a contributor for how the site will defend against the DBT. Therefore, the staff recognizes that allowing a licensee to incorporate law enforcement response as part of its protective strategy could potentially be viewed as conflicting with the Commission's past statements and current agency practice that licensees must be able to defend against the DBT without the assistance of offsite responders, and that the capabilities of offsite responders are beyond the scope of the DBT final rule (72 FR 12720, March 19, 2007; 74 FR 13940, March 27, 2009). Based on its analysis in response to SRM-SECY-17-0100, the staff determined that allowing licensees to rely on law enforcement support several hours after initiation of an attack does not equate to a licensee's lack of defense against the DBT – in this circumstance, a very low likelihood event has occurred in which the DBT adversary has endured for an extended period of time without completing the target set. The staff submits that the regulations require licensees to be prepared to defend against the DBT adversary "at all times" (i.e., at any hour of any day), but this should not mean that, in the event of an actual attack within the DBT, a licensee should be expected to defend the site without assistance "for all time" (i.e., indefinitely).

(U) The current regulation in 10 CFR 73.55(k)(9) requires that licensees document agreements with local law enforcement, to include estimated response times and capabilities. As discussed in this paper, if an attack within the DBT were to occur at an NPP site, it is reasonable to expect that law enforcement would respond consistent with the commitments in these agreements. Consequently, it is reasonable that a licensee who obtains such commitments from law enforcement agencies be able to consider these commitments as part of its strategy to interdict and neutralize threats up to and including the DBT of radiological sabotage. As such, the staff's view is that the regulations do not preclude the use of law enforcement in a site's protective strategy and that this paper provides a basis to support reinterpretation of the regulations.

(U) The NRC does not have regulatory authority over law enforcement agencies, and licensees lack the ability to compel law enforcement to maintain the capabilities documented in their agreements. Nevertheless, the staff has confidence that in a real emergency, law enforcement agencies will honor their commitments. As the Commission stated in the DBT final rule, "The Commission expects that licensees and State and Federal authorities will use whatever resources are necessary in response to both DBT and beyond-DBT events" (72 FR 12714). Additionally, the Commission has recognized in regulation, in the emergency planning context, "the reality that in an actual emergency, State and local government officials will exercise their

¹⁹ (U) In defining the DBT as the largest threat against which a private security force can reasonably be expected to defend, the Commission credited the capabilities of State and Federal authorities to conclude that NPPs are adequately protected against threats beyond the DBT (72 FR 12714).

²⁰ (U) 10 CFR 73.55(k)(9) and 10 CFR Part 73, Appendix C.II.B.3.d.

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best efforts to protect the health and safety of the public” (10 CFR 50.47(c)(1)(iii)(B)). The staff (U) expects that these “best efforts” would extend to law enforcement response to a security emergency, consistent with the existing agreements between licensees and law enforcement agencies. Further, the methodology in the NEI white paper guides the development of a tactical response plan that addresses the coordination necessary between licensee and law enforcement agency personnel for effective implementation. The tactical response plan allows the licensee to credit law enforcement assistance specifically designed to enable the performance of actions that first require the elimination of adversary interference in the owner-controlled area.



(U) Policy Option 1 – Reinterpret Existing Security Regulations through an Interpretive Rule to Allow for a Site-Specific Security Bounding Time

(U) In Policy Option 1, the NRC would issue an interpretive rule (see Enclosure 7, Summary of Proposed Interpretive Rule) to revise the Commission’s interpretation of 10 CFR 73.1 and 10 CFR 73.55 to clarify that operating NPP licensees may meet the requirements of 10 CFR 73.55 by recognizing the contributions of law enforcement response when designing the physical protection program (i.e., developing target sets). This would in turn allow for licensees to apply a site-specific SBT that places reliance on offsite law enforcement assistance to defend against threats up to, and including, the DBT. The interpretive rule would not place a bounding time on the DBT itself; rather, it would reinterpret the language in 10 CFR 73.1 and 10 CFR 73.55 to allow licensees to consider law enforcement response as part of the licensee’s physical protection program. This, however, would not enable licensees to yield responsibility for defending the site to law enforcement at any time; rather, it would allow licensees to document the extent to which their physical protection plans rely upon support from law enforcement, recalled personnel, or the use of FLEX equipment. This *Federal Register* notice (FRN) would be issued for public comment for a period of 45 days and the staff would disposition these comments within 60 days from the end of the public comment period. Following the staff’s resolution of public comments, the staff would notify the Commission of completion through a Commissioners Assistant’s Note to include a summary of the comment resolution. The final FRN would be issued following completion of the review required by the Congressional Review Act.

(U) The advantage of Policy Option 1 is that it allows a licensee to further risk-inform its physical protection strategy through consideration of law enforcement response in its physical protection program. If the Commission directs the staff to interpret the existing security regulations as described in this Option, a licensee may choose to apply a site-specific SBT after issuance of the final FRN. This Option would be more timely than making such a change through the rulemaking process. This Option would also require far fewer resources.

(U) The disadvantage of Policy Option 1 is that while the interpretive rule does provide for clarity, adequate analysis, public document and public comment, it does not provide the same

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(U) level of stakeholder involvement as an expanded rulemaking when developing an effective, long-term policy with respect to licensees' establishment of site-specific SBTs. Additionally, it would not allow the staff to clarify regulatory language across various sections of NRC regulations that a rulemaking under Option 2 would provide.

(U) Options for Implementation of Policy Option 1

(U) If the Commission directs the staff to allow for a site-specific SBT using an interpretive rule through publication in the *Federal Register* (Policy Option 1), staff seeks further Commission direction on how to implement the new Commission policy. The staff offers two Implementation Options: (a) licensees use their existing site/fleet process for assessing the impact of changes to the physical security program (e.g., 10 CFR 50.54(p)); and (b) licensees seek NRC approval of their site-specific SBT through the license amendment request process as an alternative measure (i.e., 10 CFR 73.55(r)). These implementation options are not applicable to Policy Option 2 because implementation would be addressed through the rulemaking process.

(U) Implementation Option 1(a) – Utilize the Existing Site/Fleet Process for Assessing the Impact of Changes to the Physical Security Program

(U) Under Implementation Option 1(a), licensees would utilize the fleet/site process for assessing the impact of changes to the physical security program and notify the NRC accordingly.²¹ Depending on how a licensee is applying the site-specific SBT, the staff does not rule out the possibility that a licensee could implement its SBT without prior NRC approval through the 10 CFR 50.54(p) process. However, as discussed in Enclosure 1, the staff believes that it would be challenging to justify an AIPT below 5 hours as not decreasing the safeguards effectiveness of the plan.²²

(U) The advantage to Implementation Option 1(a) is that it allows a licensee potentially to implement a site-specific SBT without expending the additional resources to submit a license amendment request (the change would still be reviewed under the security baseline inspection program) and for the staff to review these submittals.

(U) The disadvantage to Implementation Option 1(a) is that it could require additional infrastructure such as changes to guidance documents to ensure that oversight of licensees' implementation is applied consistently across the inspection program. Additionally, because the site-specific SBT is a new paradigm, there may be greater risk of inconsistent application by

²¹ (U) Each licensee has a fleet/site process to assess changes. Depending on the changes made to justify a lower site-specific SBT, a licensee could analyze a change to its program under 10 CFR 50.54(p)(2), whereby a licensee can make changes without prior Commission approval if the changes do not decrease the safeguards effectiveness of the plan, and then notify the NRC of the changes within 2 months of the change. Alternatively, if the licensee's changes to implement its site-specific SBT do not involve changes to one of its security plans (e.g., the changes are limited to procedures), it is possible no changes would be submitted to the NRC at all. Otherwise, the licensee has the option to submit the changes as a license amendment under 10 CFR 50.90, Application for amendment of license, construction permit, or early site permit, or 10 CFR 73.55(r), Alternative measures.

²² (U) 10 CFR 50.54(p)(1) states, "The licensee may not make a change which would decrease the effectiveness of a physical security plan, or guard training and qualification plan, or cyber security plan ... or of the first four categories of information (Background, Generic Planning Base, Licensee Planning Base, Responsibility Matrix) contained in a licensee safeguards contingency plan ... without prior approval of the Commission."

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(U) permitting licensees to implement this novel method without prior NRC approval, until follow-up inspections take place.

(U) Implementation Option 1(b) – Utilize the License Amendment Request Process

(U) Under Implementation Option 1(b), licensees would request implementation of a site-specific SBT through a license amendment request. Under this option, the NRC would consider the use of a site-specific SBT to be a “measure for protection against radiological sabotage other than one required by” 10 CFR 73.55 and should, therefore, be submitted as a license amendment under 10 CFR 73.55(r), “Alternative measures.” In staff’s interactions with industry throughout the development of the concepts in this paper, some industry representatives stated a preference for gaining NRC approval through a license amendment request to have more regulatory stability when implementing a site-specific SBT. This option also allows the staff to address potential regulatory issues prior to licensee implementation of the SBT.

(U) The advantage of Implementation Option 1(b) is that requiring a license amendment request to implement a site-specific SBT gives the staff the ability to review how licensees would implement the SBT in advance, confirming the licensees’ continued maintenance of reasonable assurance of adequate protection, prior to follow up inspections. It would also allow the development of reviewer guidance for NRC staff for use in evaluating amendment requests, and implementation guidance for industry for use in developing and implementing their SBT proposals, prior to follow up inspections. This guidance would include criteria for evaluating: (1) TTCD methodology; (2) coordination with law enforcement or recalled personnel; and/or (3) use of BDB equipment. This in turn would ensure a consistent application of the SBT process, resulting in increased regulatory certainty and would also make subsequent oversight more efficient and effective.

(U) The disadvantage of Implementation Option 1(b) is that it would require additional resources for licensees to submit a license amendment request to initially implement a site-specific SBT and for the staff to review these submittals. Further, the adoption of alternative measures via a license amendment under 10 CFR 73.55(r) is generally applied to unique, site-specific physical protection measures, and not to implement a generic policy change.

(U) Policy Option 2 – Revise 10 CFR Part 73 to Enable Licensees to Adopt a Site-Specific Security Bounding Time

(U) Under Policy Option 2, the staff would perform a rulemaking to clarify the applicable rule language for a site-specific SBT, particularly with regard to the role of law enforcement response. For example, this rulemaking could clarify that licensees should always be prepared to defend against an attack, but once an attack begins, it is the Commission’s expectation that law enforcement would arrive, similar to the approach for emergency preparedness in 10 CFR 50.47(c)(1)(iii)(B), and licensees may design their protective strategies accordingly (i.e., licensees do not need to design their physical security plans with the assumption that they will never receive support from law enforcement). This would allow the staff to more clearly establish the role of law enforcement response and clarify the time period for which licensees are required to defend against a DBT attack before it can be assumed that additional resources would be available to support site protection. The staff notes that this is not a rulemaking option for the Integrated Response Program, which would conflict with Commission direction in SRM-SECY-17-0100. Rather, this rulemaking option would enable licensees to adopt a site-

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(U) specific SBT and make reasonable changes to their physical protection strategies and could facilitate a streamlined process that would not require a license amendment request. This rulemaking option could also allow the staff to clearly identify in regulations the equipment that must be included in target sets (i.e., front-line safety systems). In addition, it would allow the staff to clarify how target set development could leverage risk insights and address other technical considerations such as TTCD calculations. If the Commission approves this option, staff would develop a rulemaking plan to identify the potential changes to the regulations.²³ The advantage of Option 2 is it follows a more deliberative and transparent rulemaking process than Option 1, permitting the agency to develop an effective, long-term policy with respect to licensees' establishment of site-specific SBTs. The rulemaking process allows the Commission to clarify regulatory language, including requirements in various sections of NRC regulations to reflect Commission policy. It also maximizes stakeholder involvement in the process as compared to Option 1.

(U) The disadvantage of Option 2 is that rulemaking is a resource-intensive process that would not provide a timely path forward. It is more difficult to justify in that it does not obviate the need for resources for developing guidance documents. Guidance documents are required under both Option 1 and 2. In SRM-SECY-17-0100, the Commission directed the staff to discontinue any work to develop rulemaking options for the Integrated Response Program. While the staff views SBT as a distinct framework that is unique from the Integrated Response Program, this Option would be a rulemaking to address the role of law enforcement response at NPPs, a subject matter that overlaps with integrated response. Given that the SBT concept would be voluntary in nature, there is a potential disadvantage to investing resources in rulemaking without certainty that it would result in flexibility that would be widely used.

(U) CONCLUSIONS AND RECOMMENDATION:

(U) The staff developed the RAPT and SBT concepts to facilitate a more holistic approach for crediting operator actions, including the use of FLEX equipment, recall of off-duty site personnel, and law enforcement response at operating NPPs. The staff's approach not only addresses how credit may be considered within the FOF inspection program, but also how licensees may leverage risk insights when making changes to their protective strategies. By using an alternate methodology to develop target sets, a licensee can ensure its resources are concentrated on protection of the most risk-significant equipment. The staff will assess licensees' changes, if any, under the security baseline inspection program. To optimize the effectiveness of our oversight, the staff will revise associated inspection manual chapters and inspection procedures for these security baseline inspections, which include NRC-conducted and licensee-conducted FOF inspections, and target set inspections.

(U) In applying the *Be riskSMART* framework, the staff considered the risks outlined throughout this paper and expended significant effort to work with both internal and external stakeholders in determining the best way to manage these challenges. In doing so, the staff determined that the commitment and options presented in this paper provide a reasonable approach for the staff

²³ (U) Examples of regulations that could be changed or clarified include: 10 CFR 73.55(k)(1) "maintain, at all times, properly trained, qualified and equipped personnel required to interdict and neutralize threats"; 10 CFR 73.55(d)(3) "licensee may not permit any individual to implement any part of the physical protection program unless the individual has been trained, equipped, and qualified to perform their assigned duties and responsibilities in accordance with appendix B, section VI..."; and 10 CFR 73.1 to redefine the DBT to include a time limit.

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(U) to appropriately manage the associated risks by recognizing that licensees have many layers of protection for consideration in the overall assessment of their physical protection programs, by considering how safety conditions can benefit security applications, by enhancing coordination between licensees and external resources, and by ensuring the most risk-significant equipment remains protected. This holistic approach allows concepts such as the RAPT or SBT to be implemented to recognize the additional resources available to licensees to support site safety and security.

(U) In developing these options, the staff gave significant consideration to stakeholder input and the alternative views of staff. The analysis in the paper benefitted from these diverse views.

(U) The staff recommends that the Commission:

1. (U) Approve Policy Option 1, *Reinterpret Existing Security Regulations to Allow for Site-specific Security Bounding Time*.
2. (U) Approve Implementation Option 1(b), *Utilizing the License Amendment Request Process*.
3. (U) Approve the staff's request to stop providing semi-annual updates on the Integrated Response Program, as required by SRM-COMSECY-13-0005, in order to focus the staff's efforts on the implementation of the concepts in this paper. Enclosure 5 provides a history of the Integrated Response Program and lessons learned from the program, and provides an explanation for why the staff believes updates are no longer needed.

(V) COMMITMENT:

(U) The staff will include the RAPT concept in a revision to RG 5.76, which staff plans to issue by October 2020. This updated guidance will specify that one way for licensees to meet the existing regulatory requirements (including the requirement to maintain the capabilities to defend against the DBT at all times) and provide reasonable assurance of adequate protection is by designing a physical protection program that allows the licensee to independently defend against the DBT for a minimum of 8 hours, after which it is reasonable to expect that additional resources will be available. There would be no additional requirements imposed on a licensee to apply a RAPT, and the staff will assess the site's implementation of the RAPT under the security baseline inspection program to ensure the licensee's physical protection program continues to meet the general performance objective of 10 CFR 73.55(b).

(U) BACKFIT:

(U) Backfitting is defined, in part, in 10 CFR 50.109 as "the modification of or addition to ... the procedures or organization required to ... operate a facility; any of which may result from a new or amended provision in the Commission's regulations or the imposition of a regulatory staff position interpreting the Commission's regulations that is either new or different from a previously applicable staff position." The RAPT would not impose new requirements on covered entities by regulation, order, or a staff position interpreting a regulation. The RAPT recognizes

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(U) many layers of defense that are already present and would not constitute backfitting because it would allow licensees to voluntarily identify certain target sets or target set elements that would not be required to be protected in accordance with licensees' physical protection strategies. The revised RG would provide guidance to licensees on implementing specific parts of the NRC's regulations and is only one NRC-approved method (i.e., it would not impose new requirements).

(U) The site-specific SBT would only apply to licensees who voluntarily elect to implement it. It would not impose new requirements on these entities by regulation, order, or a staff position interpreting a regulation and, therefore, would not constitute backfitting. For Option 2, the staff's intention is that a rulemaking would provide for a site-specific SBT as a voluntary option that licensees could adopt to meet the general performance objective of 10 CFR 73.55. The staff would perform a backfit evaluation as part of any approved rulemaking.

(U) RESOURCES:

(U) Resources to support the commitment to revise RG 5.76 are included in the fiscal year (FY) 2020 current estimate and the FY 2021 budget request because an update was already planned. Resources to support either policy option will be allocated in accordance with the Commission's direction. Should the Commission direct the staff to work on these activities in FY 2020 and FY 2021, resources would be reallocated from lower-priority work. Resources for FY 2022 and beyond will be addressed through the planning, budget, and performance management process. Enclosure 4 provides a more detailed breakdown of estimated resources for the associated activities.

(U) COORDINATION:

(U) The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

Margaret M. Doane

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Doane
Date: 2020.07.30 13:11:48 -04'00'

Margaret M. Doane
Executive Director
for Operations

(U) Enclosures:

1. (U) Additional Background and Technical Discussion
2. (U) Factors to Consider for Documentation of Criteria
3. (U) Some Alternative Staff Views
4. (U) Resource Estimates (non-public)
5. (U) Integrated Response Program: History, Status, and Lessons Learned
6. (U) Legal Analysis of the Office of the General Counsel (non-public)

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7. (U) Draft *Federal Register* notice

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SUBJECT: TECHNICAL EVALUATION OF THE SECURITY BOUNDING TIME CONCEPT
FOR OPERATING NUCLEAR POWER PLANTS

DATE: July 30, 2020

ADAMS Accession No. ML20126G265 Pkg *via email

OFC	NSIR/DPCP/RSB	NSIR/DSO/SOSB	NSIR/DPCP/RSG	NSIR/DSO	NSIR/DPCP
NAME	GPurdy*	RRichardson*	ABowers*	SAtack*	SHelton*
DATE	12/08/19	12/08/19	01/08/20	01/07/20	03/27/20
OFC	OCFO	RI	RII	RIII	RIV
NAME	JJohnson*	RLorson*	LDudes*	JGiessner*	SMorris*
DATE	4/21/20	04/30/20	04/28/20	04/29/20	04/29/20
OFC	NMSS/REFS	NSIR/TechEd	OGC	NSIR	EDO
NAME	JTappert*	CRaynor*	JMaltese*	BHolian*	MDoane
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