REIMAGINING THE BROADER CONCLUSION

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ABSTRACT

Safeguards conclusions are the ultimate product of the International Atomic Energy Agency (IAEA) verification process and ensuring their rigor and credibility is of paramount importance. As safeguards evolve to further implement the State-level concept and make better use of all safeguards-relevant information, the process for reaching these conclusions has grown more complex. With regards to the broader conclusion, some notable issues include: (1) interpreting diverse information to assess the absence of undeclared activities, (2) evaluating the effectiveness of State-level safeguards approaches and communicating this information to Member States, and (3) responding to changing verification circumstances in a State, such as interrupted access to key locations. Considering these issues, this paper reviews the history and basis of the IAEA's practice for drawing a broader conclusion and identifies potential opportunities to strengthen this process. Topics addressed include (1) safeguards planning and evaluation, (2) the review and approval of safeguards findings and conclusions, and (3) communication to Member States. The paper discusses possible measures to enhance the rigor of drawing a broader conclusion such as enhanced use of performance targets and structured analytic techniques, reframing the language of the conclusion in the Safeguards Implementation Report, and providing more supporting information on safeguards effectiveness.

INTRODUCTION

For most of its history, the IAEA issued a single type of safeguards conclusion confirming that all declared material, equipment, and facilities under safeguards remained in peaceful use. In the Safeguards Implementation Report (SIR) for 1999, the IAEA began issuing a *broader conclusion* (BC) for certain States with a comprehensive safeguards agreement (CSA) and an additional protocol (AP) in force. The BC pertained to both the correctness and completeness of declarations for the State as a whole—a step that was justified in part by the IAEA's greater ability under an AP to detect and investigate indications of potential undeclared activities.

Over the past 20 years, the IAEA has oriented its framework for implementing CSAs towards the State (rather than facilities or strata of nuclear material) as the principal unit of analysis. This framework emphasizes (1) using all safeguards-relevant information—including information from AP declarations, complementary access (CA), and open sources—to identify indications of potential undeclared activities and (2) developing tailored State-level approaches (SLAs) that incorporate analysis of a State's fuel cycle and other factors to optimally deploy verification resources.

While these changes have yielded benefits, they have also introduced new challenges for how the IAEA reaches and frames its safeguards conclusions—especially with respect to undeclared activities in the State as a whole. For example:

- The IAEA must manage a growing volume of information and reconcile diverse evidence from across the fuel cycle. It must reach judgments about the absence of undeclared activities (which cannot be systematically verified in the same manner as declared nuclear activities), all within the bounds of its legal authorities and established norms of objectivity and non-discrimination. This involves inherent difficulties and requires processes, tools, techniques, and organizational culture to sustain robust analysis that is not anchored to past findings.

- The IAEA has encountered—and will continue to encounter—situations of interrupted inspection access, insufficient provision of information, and other problems of safeguards implementation. While many of these issues have innocent explanations, the Agency must find ways to issue soundly based technical findings rooted in verification results and reflective of its authorities and competencies.

- Under a SLA, safeguards measures are no longer implemented using uniform criteria for frequency and intensity, such as the Safeguards Criteria. However, there remains an ongoing need for tools to help plan and evaluate activities and assure they are appropriately robust to meet verification objectives. This process should be explicit, documented, and objective. This is particularly challenging with regard to how much confidence can be placed in assessments about the absence of undeclared activities.

- As the analytic basis for reaching safeguards conclusions grows more complex, there is a renewed need to examine how conclusions are communicated. However, the IAEA no longer reports certain types of information and data in the Safeguards Implementation Report (SIR) that help draw the link between verification activities, findings and conclusions.

Many of these issues apply to all safeguards conclusions issued by the Agency, but they are most acute for the BC, due to its expansive scope, the challenges associated with detecting undeclared activities, and historical 'hard cases' involving States with BCs.

This paper describes the findings of a 2020 study on the BC sponsored by the DOE National Nuclear Security Administration. The paper begins by exploring the logical basis of the BC, its history (including lessons from unique challenges), and the IAEA's practices for issuing a BC. It then moves into a step by step analysis of issues and recommendations relating to (1) safeguards planning and execution, (2) the review and approval of safeguards conclusions, and (3) the communication of safeguards conclusions to Member States. To inform this analysis, the study team also conducted a thorough review of analogous decision problems from other fields, such as law enforcement, illicit finance, accident investigation, etc. to identify insights of relevance to the IAEA.

HISTORY OF THE BC AND RELATED POLICY CHALLENGES

The authors reviewed Safeguards Statements and the Background to the Safeguards Statements and Summaries (as reported in the SIR) going back to the 1990s to trace how the BC and its supporting content have evolved. The first statement resembling the BC was issued in the SIR for 1999 with respect to Australia and the Holy See. It reported the lack of indications of diversion or undeclared activities in these States. The SIR for 2000 first used the term "broader conclusion" and made explicit the *conclusion,* that for each of these States, "all nuclear material remained in peaceful activities." Later modifications to the Safeguards Statement or its explanation include:

- In the SIR for 2003, the Agency articulated "proliferation concern" as the key criterion for adjudicating the importance of safeguards implementation issues and whether they merited the withholding of a finding on the absence of diversion or undeclared activities. The Agency also began

issuing different types of conclusions for groups of States based on their safeguards agreements and implementation.

- In the SIR for 2004, the BC was noted as the prerequisite for integrated safeguards, as foreseen in earlier Agency documents.

- In the SIR for 2004, the safeguards statement made explicit that the Agency had little information or access to States with an (original) small quantities protocol (SQP) in force, yet several such States with APs in force were granted a BC before the modified SQP text was approved in 2005. (Afterwards, BCs were not drawn for additional States with original SQPs in force). Subsequent statements did not emphasize the limitations of original SQPs for robust safeguards conclusions.

- After 2010, the SIR stopped referring to performance targets as significant to its process of drawing safeguards conclusions and ceased its reporting on inspection goal attainment, while launching the State-level concept project.

During this time, several States that had BCs became the focus of safeguards implementation issues that posed unique challenges in terms of conclusions. Most importantly:

- In 2011, the Agency became unable to verify nuclear material at Japan's Fukushima reactors due to the nuclear accident. Considering the inaccessibility of the material, the additional transparency measures taken by Japan, and a judgment that interrupted access did not raise a proliferation concern, the IAEA decided to reaffirm Japan's BC.

- Due to the civil war that followed the 2011 Arab Spring, the IAEA had reduced access to information and locations in Libya. In the 2019 SIR, the IAEA did not reaffirm Libya's BC, marking the first time it had taken such a step for any State.

- Due to the 2014 occupation of part of Ukraine, the IAEA became unable to access a research reactor in the Crimea region. The IAEA reaffirmed the BC for Ukraine despite not having access to the Ukrainian facility. (In the SIR for 2020, the IAEA did not reach the BC with respect to Ukraine.)

- Historically, another major issue was the presence of BC States that had not yet adopted a modified SQP. In these situations, the Agency had severely restricted access to information and locations, impacting its ability to reach meaningful verification conclusions. The IAEA stopped issuing initial BCs for States with original SQPs beginning in 2005, although some SQP States that had previously received a BC did not rescind or amend their SQPs until as late as 2015. The current Director General appears to be taking the issue of original SQPs seriously, issuing letters saying that "The IAEA's ability to draw a credible and soundly based annual safeguards conclusion for those States is becoming increasingly challenging."[1]

The IAEA Secretariat's greatest asset is its reputation and credibility as a technical factfinder and some of these historical episodes raised concerns that safeguards conclusions did not fully reflect the technical facts on the ground. This record of reissuing BCs---even for States where safeguards challenges existed--- made clear the potential drawbacks of using the subjective or opaque notion of "proliferation concern" as a threshold for issuing a BC. Part of the problem is that, through continually reaffirming BCs and by linking them to reduced inspection burdens through integrated safeguards, the BC could be seen as a marker of good behavior and a key factor in safeguards planning, such that revoking it would have both reputational and practical consequences. Despite the decision not to reissue a BC for Libya in the SIR for 2019 or Ukraine in the SIR for 2020, it remains important to ensure that conclusions not be routinely renewed each year without fresh reexamination.

Standard reissuing of BCs could also disguise growing stress on the Agency's safeguards system arising from budgetary or operational challenges. States may be unmotivated to address budgetary issues that could stretch the Agency's verification system if the detrimental impacts on safeguards effectiveness and safeguards conclusions are not transparently communicated.

The COVID-19 crisis, which reduced in-field access in some States, presents a unique challenge and opportunity of its own. The pandemic presented the issue of how the IAEA should provide assurances without creating the impression that in-person verification is somehow expendable. Fortunately, the COVID-19 crisis does not have a challenging political dimension or otherwise introduce unintended connotations of noncompliance.

In view of these issues, it is logical that if the verification situation in a State changes materially, then these changes should be reflected in safeguards conclusions---regardless of "proliferation concern." Changes in safeguards conclusions should not necessarily be a rare occurrence or considered derogatory to the State. While State-specific reporting in the SIR has often focused on issues of noncompliance, this reporting could be used more widely to promote increased impartiality and provide a basis for understanding the significance of material changes. Likewise, the Agency could establish clear guidance on granting further BCs, for example, relating to territorial control, a history of stable and responsive implementation of the CSA and AP, and if applicable, a modified SQP, proper adherence to privileges/immunities or a lack of unresolved issues.

Beyond these general topics, the remainder of this paper considers specific elements of the IAEA's process for reaching the BC. The three phases considered are: (1) safeguards planning and evaluation, (2) internal review and approval of findings, and (3) communication to Member States.

SAFEGUARDS PLANNING, EXECUTION AND EVALUATION

At an abstract level, the safeguards planning, execution, and evaluation process can be framed around a structured set of generic objectives. In the terminology of the IAEA, for States with a CSA, these are:

- **Objective A:** Detect diversion of declared nuclear material at declared facilities or locations outside facilities (LOFs)

- **Objective B:** Detect undeclared production or processing of nuclear material at declared facilities or LOFs

- **Objective C:** Detect undeclared nuclear material or activities within the State as a whole

Reaching the BC signifies the Agency's confidence in both the **sufficiency** of Agency measures and the **substance** of its findings with respect to **all three objectives**.

The IAEA has robust authorities and tools to detect diversion and misuse at declared locations (i.e., Objectives A and B) and it is generally possible to develop quantitative expressions (or performance targets) of timeliness and detection probability for related technical objectives. Objective C is different. This objective is not geographically bound to a set of facilities or LOFs; it cannot be systematically verified; and it depends upon a process of identifying and resolving leads that is not tractable to standard probabilistic analysis. The likelihood that the IAEA would detect a certain form of undeclared activity (without the provision of third-party information) can be disaggregated into several constituent probabilities, specifically the likelihood that: (1) detectable indicators exist, (2) the IAEA would detect

and successfully identify indicators of activity, and (3) that these indicators would be correctly classified/resolved in a timely manner.

The IAEA's processes for safeguards planning and evaluation should help it to rigorously and efficiently address these three objectives at appropriate levels of confidence. Some tools to improve the effectiveness of safeguards planning and evaluation include the following:

- **Performance targets and SLA improvement**: In the SIR for 2019, the IAEA reported that it is testing different formulations of performance targets that will be used for safeguards planning and evaluation. The lack of objective targets to determine *sufficiency* (as outlined above) remains perhaps the greatest gap in the planning and evaluation tasks under SLAs. For many years, other authors in the safeguards community have advocated for the use of such targets to plan and evaluate the attainment of technical objectives, as well as other performance targets that relate to acquisition paths.[2] The authors strongly endorse these plans. While the Safeguards Criteria provided a historical template for targets under Objectives A and B at the facility level, it is important to establish performance targets under Objective C relating to due diligence[3] in issues such as (1) exploiting open source tools, (2) conducting timely CA, and (3) identifying and resolving questions or irregularities.

- **Structured analytic techniques and estimative language:** While developing performance targets is an essential step, State evaluation groups (SEGs) will always need to make judgments under uncertainty and assimilate diverse forms of qualitative evidence. There is extensive scientific research on the cognitive and communication problems that can prevent groups from reaching unbiased or robust decisions, and other research has documented how these issues pertain to SEGs.[4] **There are several recommended practices to address these problems, and it is worth pursuing their consistent adoption across SEGs.** Department of Safeguards staff currently receive Member State-sponsored training on structured analytic techniques that are designed to mitigate known biases. These include *red-teaming* (i.e., using independent experts to critically vet or challenge concepts in an adversarial framework); demanding that all assumptions in an analysis be made explicit at the outset; explicitly considering alternative hypotheses that might explain a given set of data; and *backcasting*— identifying what data one would expect to observe *now*, if a future or uncertain hypothesis were true. These processes are conceptually simple, but they can be effective to mitigate bias when correctly implemented. Some of these techniques are used in certain parts of the Department; however, their implementation could be further standardized.

  Another simple but powerful step would be the standardized use of estimative language to express uncertainty. While reaching the BC is a simple, binary decision, it is composed of numerous hypotheses (associated with generic objectives, acquisition paths, etc.) that are subject to uncertainty. Forcing SEGs to disaggregate their findings and attach uncertainties to key pieces of underlying evidence will prevent a 'rubber stamp' mindset. Such a process can be facilitated through the use of tools in which analysts independently assign subjective probabilities to key verification questions, such as the likelihood that a certain type of diversion would be identified as such. This process can be an effective tool for identifying areas of agreement, determining verification priorities, and facilitating review.

Among the most important policy changes will be establishing an expectation that conclusions will need to be made anew each year, without undue credit given to past findings or conclusions. Estimative language and a disaggregation of hypotheses and sub hypotheses provides a natural framework for SEGs to thoroughly address questions and convey their findings to review committees.

In addition, the study evaluated mathematically inspired decision tools that help analysts combine and weigh competing evidence. The authors examined tools such as Dempster-Shafer (D-S) theory and Bayesian networks (BN), which are well founded and commonly used models that enable analysts to ascertain the structure of a statement of belief and its dependence on other beliefs and evidence; incorporate and compare the strengths of different evidence or beliefs; and assess how they affect final judgments. Strictly speaking, these models require assigning conditional belief functions (D-S) or conditional probabilities (BN), but the real potential benefit lies in the process of model building that reveals the analyst's mental model *without needing to assign or estimate exact probabilities*. While this does not automate the decision process, it forces users to think more transparently and more rigorously about the decision they are making and facilitates constructive discourse on differing views among analysts. The process also exposes potential inconsistencies or biases that can lead to bad decisions and provides insights on how sensitive the results are to differing judgements. Other authors[5] have described the application of such tools for nonproliferation in greater depth.

Some of these proposed steps—such as the standardized use of estimative language or the incorporation of routine analytical practices—would not necessarily introduce new resource burdens beyond initial training costs. In other cases, adding new tools, requirements, or time-consuming review techniques would be counterproductive if not supported by appropriate resources and targeted at appropriate problems. In implementing changes, it will be important to identify which changes are resource-neutral and which require ongoing investment (or a compensating reduction in other types of work). It will be important to account for the costs and benefits of specific analytic measures, so they can be deployed efficiently into a SEG's existing workflow.

REVIEW AND APPROVAL

The quality and credibility of conclusions depends on the implementation of checks and balances, many of which are institutionalized in the Department's processes, procedures, guidance and culture. Key components include effectiveness evaluation, peer review of analytical products such as State evaluation reports (SERs), and the departmental review committees that recommend safeguards conclusions to the DDG-SG. When implemented effectively, these processes generate sound conclusions and defend against external pressures and other influences detrimental to the Agency's independence.

Prior to reductions in its evaluation activities which began circa 2011, the Safeguards Section for Effectiveness Evaluation (SEE) conducted an independent assessment of the findings from safeguards implementation, validating results and flagging issues. Such assessments have migrated to Operations Divisions, introducing variability in how this is done. The benefits of restoring independent evaluation merit reconsideration. Taking a lesson from counter-terrorism finance and accident investigation case studies examined in the study, a qualification program for staff involved in this key function may warrant consideration. The methodology should be documented and explained to Member States and oriented around attainment of technical objectives and resolution of implementation issues.

Due to the nature of the collaborative analysis that goes into SERs, a peer review process carried out by experienced analysts and inspectors would improve the quality and consistency of these critical products. A robust peer review process will contribute to the professional development of SEG members; better prepare them for committee reviews; establish expectations for analytical rigor; and improve the quality of conclusions.

There may also be opportunities to strengthen committee review processes. Committee members should expect that no conclusions are justified, requiring the SEG to convince them otherwise. The Committee

members should be selected from amongst the more experienced staff members, who are more likely to be able to recognize problems in an SER, to acknowledge the inherent uncertainty and determine issues that warrant reconsideration of a recommended conclusion. Committee members could be trained to recognize group bias, anchoring bias, or other issues that lead a SEG to overlook an important piece of evidence. The Department could prepare clear guidance for Committee members, on how they should prepare, how the committee will work, and what it will produce. The Committee members (and leadership overall) must be courageous in conveying information up the chain and supporting the Director General when decisions unpopular with Member States must nevertheless be reported.

COMMUNICATION

Although it is founded on an extensive process of verification, analysis, and approval, a safeguards conclusion is ultimately nothing more than a statement released by the IAEA summarizing the Agency's basic findings. Effective safeguards only provide useful *assurance and deterrence* if their effectiveness is understood and trusted by Member States. This requires communication and adequate provision of supporting or contextual information in the SIR. The report addresses three principal problems of communicating the BC in the SIR. The phrasing of the BC in the SIR expresses—based on a lack of indications of diversion, misuse, or undeclared activities—that ***all nuclear material remains in peaceful activities***. This phrasing contains an implicit assumption that the IAEA would correctly gather, recognize, and adjudicate any such indications, were they to exist. However, the IAEA has limited authorities and resources to search for undeclared activities outside known locations, and it does not have an established standard of diligence for conducting open-source searches, CAs (especially under AP article 5.c) or other activities crucial to finding such indicators. In some States, very little verification effort is expended, and CAs are infrequent. In such cases, it is not entirely surprising that indicators are not found. The expansive finding contained in the BC is open to misleading interpretations that could harm the Agency's credibility if serious issues are later revealed. The authors recognize the benefit of a more bounded phrasing that better reflects the Agency's actual authorities and competencies, based around the notion of "increased assurance."

A second challenge is the need for communications that highlight the connection between verification activities and safeguards conclusions. The SIR no longer contains information and context for understanding safeguards conclusions. For example, as integrated safeguards approaches reduced the role of the Safeguards Criteria, the Agency ceased reporting inspection goal attainment but offered no information about the effectiveness of integrated safeguards. It remains critically important to understand targets and trends for safeguards effectiveness, especially as the IAEA pursues efficiencies that can entail reduction of in-field verification activities.

At different times in the past, Member State officials have noted downturns in metrics such as inspection effort and CA, yet it is very difficult to understand whether these trends are causing an erosion in effectiveness that impacts the credibility of safeguards conclusions. For example, if the Agency reduces in-field inspections based on its increased assurance in the absence of undeclared activities, this raises the question: what activities is it performing to sustain this level of assurance?

In this regard, the IAEA's historical reporting on goal attainment, which ceased after the SIR for 2010, could be updated to reflect safeguards under the State Level Concept. Reporting could focus on the achievement of performance targets associated with technical objectives. Two potential concepts are illustrated in Figure 1. In the first example, technical objective (TO) attainment is described for the fictitious state of Freedonia. (This assumes that performance targets for Objectives A and B pertain to the *frequency* and *intensity* of verification activities, while TOs for Objective C are based on achieving a

standard of diligence). In the second example, TOs are aggregated for a group of States with respect to different facility types.

State	TOs attained for Objective A (timeliness component)	TOs attained for Objective A (quantity component)	TOs attained for Objective B (timeliness component)	TOs attained for Objective B (quantity component)	TOs attained for Objective C
Freedonia	18/20 (90%)	15/20 (75%)	5/5 (100%)	5/5 (100%)	4/5 (80%)

Group of States	TOs attained at Power Reactors	TOs attained at Enrichment Plants	TOs attained at Separate Storage Facilities	TOs attained at Fuel Fabrication Plants	TOs Relating to Undeclared Locations
States with CSA and AP	150/200 (75%)	15/15 (100%)	12 /12 (100%)	15/17 (88%)	250/295 (85%)

Figure 1. Example concepts for reporting on attainment of technical objectives.

A soundly-based BC must be supported by a vigorous search for undeclared activities. This search must make use of the information and tools afforded by an AP as well as other information available to the Agency to identify and resolve apparent inconsistencies. However, this essential component of safeguards is not reported in the SIR in any detail. It is important to have details on the quantity and nature of safeguards implementation issues identified each year, how long it takes to resolve them, how serious the issues are, and if applicable, what the issues relate to and what factors are preventing their resolution.

CONCEPTS FOR CONSIDERATION

Based on the issues explored in the previous sections, the authors offer the following concepts for consideration, recognizing that some may already be under development in the IAEA, and acknowledging that some are inspired by the past work of others.

Cross Cutting Policy Recommendations

1. The IAEA could reconsider the threshold of "proliferation concern" (which contains an implicit judgment of *intent*) when deciding whether to grant a conclusion despite safeguards implementation issues. If an unresolved issue meaningfully erodes the Agency's ability to draw confident findings based on its technical competencies, the conclusion should not be issued. In unusual situations involving interrupted access, it may be appropriate for the Agency to issue a conclusion that applies to a specific geographic part of a country, or, if politically untenable, to only issue findings in respect of the verification activities that it was able to carry out.

2. Member States and the IAEA should avoid linking the issuing of a BC to other desired outcomes that could create conflicts of interest for the Agency or its staff. One starting point is to end the connection between a BC and integrated safeguards, especially as SLAs are developed for all States.

This could protect the BC's status as a purely technical finding, rather than an a desired end-state or a gateway to reduced inspection effort.

3. The Agency could discontinue the practice of reaching safeguards conclusions for States with an original SQP, due to lack of basic information and access that prevails in many of these States. Previous iterations of the SIR's safeguards statement have explicitly noted the limited basis for reaching such conclusions.

Planning and Evaluation

4. The IAEA could develop internal guidance for SEGs to follow before recommending a BC and set out basic requirements to be met by both the IAEA and the State authorities, to establish a sound 'footing' underpinning a BC. Factors might include territorial control, sufficiently lengthy and stable history of cooperation between the IAEA and the State, resolution of all issues relating to privileges, immunities and equipment, etc. However, management should emphasize that a BC is not perceived as the culmination or end-state of safeguards evaluation in a State; it should be evaluated afresh each year.

5. The authors endorse the use of performance targets for determining the sufficiency of verification and evaluating its effectiveness. Performance targets are especially essential for detecting undeclared activities—because the likelihood of detecting indications of undeclared activities depends on how vigorously leads are pursued, processed, and resolved.

6. The IAEA has promoted practices that involve structured analytic techniques (SATs) to help analysts reach robust conclusions and avoid cognitive bias. However, the adoption of these techniques remains inconsistent. SATs include concepts such as analysis of competing hypotheses, assumption testing, backcasting and red-teaming. The authors endorse the findings of previous authors that SATs be instituted more broadly within SEGs and incorporated into the peer review and management approval processes.

7. SEGs could use standardized estimative language to communicate degrees of confidence in their findings, assumptions, and evidence. While it is acknowledged that conclusions in the SIR will likely remain binary, estimative language in internal assessments within the Safeguards Department will allow SEGs and managers to better address the rich and often complex judgments that go into a safeguards conclusion, and how these change over time. This will be an important step towards encouraging SEGs to freshly examine conclusions each year, with no undue anchoring to past conclusions.

8. The IAEA could consider the development of graphical decision-making tools to deconstruct decisions, identify cognitive inconsistencies, and better understand and convey how different judgments and evidence weigh into rational final decisions.

Review and Approval

9. The IAEA could re-establish an independent effectiveness evaluation function, comprising experienced staff and oriented around assessing the achievement of performance targets, attainment of technical objectives and resolution of safeguards implementation issues. SEG products should be subject to a peer review process, and every SER should argue for why a conclusion should be drawn, rather than why last year's conclusion should be repeated.

10. The Department could enhance its safeguards implementation review committees by ensuring members have sufficient experience and are provided with clear guidance on Committee responsibilities, conduct and performance.

Communication

11. Reflecting the IAEA's limited tools to systematically verify the absence of undeclared activities, the IAEA could amend the language used in the BC so that it no longer "concludes" that "all nuclear material remains in peaceful activities." It may instead reference "enhanced" or "increased" assurance that nuclear material remains in peaceful use and clearly link this assurance to the accomplishment of performance targets described later in the SIR. The explanatory paragraphs could explicitly acknowledge the distinction between quantitative findings of non-diversion/misuse and qualitative findings on the absence of undeclared activities. There are precedents for these actions in the SIRs from the 1990s-2000s.

12. The SIR could report on the attainment of technical objectives under SLAs and provide narrative detail for how performance targets are set, how they influence frequency and intensity of verification effort, and how they are used to evaluate whether safeguards objectives were achieved. The IAEA could also consider using ranges or statistical distributions to describe performance targets in a way that is flexible, protective of sensitive information, yet still informative.

13. The SIR could provide information about unresolved issues—such as the length of time to resolve them, the number and type of issues identified, the seriousness, and circumstances delaying their resolution.

ACKNOWLEDGEMENTS

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