Inspection Record – Dutyholder Report			
Physical Inventory Taking Evaluation (PITe)			
Inspection ID	IR-52508	**Inspection Date(s)**	12/12/2023 For 2 Days
Dutyholder	Westinghouse Springfields	**Site**	Springfields Works
Inspection Type	Announced Planned	**Site Area / Group**	
ONR Purpose	Safeguards	**Inspection Source**	

Subject (s) of Inspection

Activity	RAG Rating
NSR19 Reg15 - Material balance report and physical inventory listing	GREEN
FSE 9 Material Balance	GREEN
FSE 7 Nuclear Material Tracking	GREEN
NSR19 Reg09 - Operation of an accountancy and control plan	GREEN
NSR19 Reg06 - Accountancy and control of qualifying nuclear material	GREEN
NSR19 Reg10 - Operating records	GREEN
NSR19 Reg11 - Accounting records	GREEN
FSE 8 Data Processing and Control	GREEN
NSR19 Reg14 - Inventory change report	GREEN
FSE 10 Quality Assurance and Control for NMACS	GREEN
FSE 3 Competence Management	GREEN
Overall Inspection Rating	GREEN

System (s) – where applicable

Inspector(s) taking part in Inspection

Lead Inspector
[redacted]

Attending

[redacted]	[redacted]	Office for Nuclear Regulation
[redacted]	[redacted]	Office for Nuclear Regulation
[redacted]	[redacted]	Office for Nuclear Regulation

This report is an automated extract of data from the ONR WIReD Inspection database.

1. Scope

1.1 Aim of Inspection

ONR nuclear safeguards inspectors will conduct a PITecompliance inspection of the Material Balance Area (MBA) QBS0 - " Storage areas for miscellaneous compounds, residues & sources" on the 12-13 December 2023.
The purpose of this inspection is to seek evidence in support of Springfields Fuels Limited's compliance with The Nuclear Safeguards (EU Exit) Regulations 2019 (NSR19), specifically evidence that SFL has appropriate Physical Inventory Take (PIT) arrangements in place and that they are adequately implemented.
ONR will form regulatory judgements and provide a rating in line with ONR's inspection rating guidance of Springfields Fuels Limited's compliance against the following regulations in NSR19:

Regulation 6(1-4): Accountancy and control of qualifying nuclear material,
Regulation 9: Operation of an accountancy & control plan,
Regulation 10(1): Operating records,
Regulation 11(1-4): Accounting records,
Regulation 14: Inventory change reports,
Regulation 15 – Material balance report and physical inventory listing

To form effective regulatory judgements on Springfields Fuels Limited's compliance with the NSR19 regulations listed above, inspectors will consider the ONR guidance for the assessment of Nuclear Material Accountancy, Control and Safeguards (ONMACS) and the expectations within. There will be a particular focus on:

FSE 3 - Competence management
FSE 7 – Nuclear material tracking
FSE 8 – Data processing and control
FSE 9 - Material Balance
FSE 10 - Quality assurance and control for NMACS

1.2 Inspection Scope

ONR will seek to draw an independent and informed regulatory judgement that the nuclear material accountancy and control arrangements in relation to the PIT and internal PIV within the MBA QBS0 are implemented in a manner, which is proportionate to, and appropriate for the qualifying nuclear facility. This will include:

Seeking evidence that accountancy reports provided to the ONR under regulations 14 and 15 are traceable and accurate to the supporting source documentation. As part of this, inspectors will examine the underpinning operating and accounting records for the accountancy sample (which will be provided later) as well as perform physical verification for a sample of qualifying nuclear material.
Seeking evidence of the implementation of local arrangements for the PIT described and referenced in the Accountancy and Control Plan (ACP) and the BTC for QBS0.
Seeking evidence of the implementation of local arrangements for the production and

validation of PIL and MBR described and referenced in the Accountancy and Control Plan (ACP) and the BTC for QBS0

ONR requests discussions with relevant staff and provision of relevant NMAC&S arrangements prior to the intervention; see the proposed detailed agenda in annex 1 (Document CM9 2023/53290).

1.3 Relevant Regulatory Guidance

The following regulatory guidance corresponds with this inspection

Name
SAFEGUARDS TECHNICAL INSPECTION GUIDE
ONR Nuclear Material Accountancy, Control, and Safeguards Assessment Principles (ONMACS)
Nuclear Material Accountancy Technical Assessment Guide Safeguards
ONR-INSP-GD-064 - General Inspection Guide

2. Summary Statement

This inspection was planned at Springfields Fuels Limited (SFL) during 2023/2024, in accordance with the Safeguards Sub-Division strategy and safeguards operational schedule supported by regulatory intelligence derived from operator declarations. This inspection was a Physical Inventory Taking evaluation (PITe) inspection of the operator's arrangements and their implementation for compliance with the Nuclear Safeguards Regulations 2019 (NSR19) and was conducted in accordance with the safeguards operational schedule for 2023/2024.

The purpose of this PITe inspection was to seek evidence in support of SFL's compliance with The Nuclear Safeguards (EU Exit) Regulations 2019 (NSR19), specifically that SFL has appropriate Physical Inventory Taking (PIT) arrangements in place and that they are adequately implemented. The inspection targeted the Material Balance Area (MBA) QBS0 –Storage areas for miscellaneous compounds, residues & sources. The evidence sampled during the inspection was used to judge SFL's compliance with NSR19, specifically the following regulations 6(1-4), 9, 10(1), 11(1-4), 14 and 15 in NSR19 and expectations.This intervention was performed in line with ONR's guidance (as described in the relevant technical inspection guides, which can be found on ONR's website (website):

I carried out a PITe inspection at the SFL site, MBA QBS0. The inspection involved a two-day site visit, including plant walkdowns, discussions with relevant SFL personnel, review of records, and sampling of information contained within electronic databases and other documentation. During the inspection I sought to gain assurance of the adequacy of SFL's arrangements for the PIT and that these arrangements are implemented adequately.

No significant or minor shortfalls in compliance against NSR19 were identified during this intervention.

Based on the sample I inspected of SFL's PIT arrangements, including operating records and accounting records, I judge SFL to be compliant with NSR 19 regulations 6, 9, 10, 11,14 and 15(including schedule 2) and that SFL are adequately implementing those

arrangements for the PIT.

I specifically sampled the arrangements for the PIT at QBS0. I gave regulatory advice that SFL should includea number of operational documents to their document management systemto ensure that all documents used are referenced accordingly. However, I judge that this did not impact on the accuracy or completeness of the operator's PIT.

3. Record & Judgement

3.1 Staff seen as part of Inspection

The following principal staff were seen as part of this inspection

Name	Role	Company
[redacted]	[redacted]	Springfields Fuels Limited
[redacted]	[redacted]	Springfields Fuels Ltd
[redacted]	[redacted]	Springfields Fuels Ltd
[redacted]	[redacted]	Springfields Fuels Ltd
[redacted]	[redacted]	Springfields Fuels Ltd

3.2 Record

Evidence

Springfields Fuels Ltd outlined the planning process for the PIT activities during the opening meeting, which each of the plants outlining their process for preparing for the PIT and ensuring that the plant was in an optimised condition. They referred to the use of internal independent inspectors for verification purpose, I requested evidence of the job cards and the training records of the inspectors. This was provided after this session and correlated with those that had been carried out the verification activities.
Observation: I identified this as good practice the use of independent verification of PIT activities.

I performed a walkdown of the plants that make up QSB0, detailed below.

Residue stores
The staff and material custodian took me through the process they follow to prepare and carry out the PIT. I verified that the arrangements used were as stated in the sites ACP SSI 945 and the instruction SSI 752 NM Physical Inventory taking and verification. The staff were knowledgeable about their process and the purpose of the PIT and safeguards measures. All the source data was in place and was readily available. Sampling this I was able to verify the positions of four drums, at three randomly selected locations. However, I did note an improvement to the stores. At present the line of drums has only a row

nomenclature without defined positions in the row, meaning that sampling for verification could be time consuming and that staff spent more time than required in the area.

Regulatory advice: Operator should consider means of having individual drum positions or take credit that they must check more drums per row than their verification sample.

On exiting the facility, I examined the weigh scale used for accountancy, when asked about calibration of the scale, staff replied that was the responsibility of instrument maintenance and they held records for calibration and justification of range and periodicity. These were requested for evidence and supplied on the second day of inspection. The range and justification were in line with the manufacturers recommendations which were provided as well.

New Enriched Powder Store (NEPS)
Arrangements were in place and followed as per the instructions as previously mentioned. The material custodian showed me the planning that he went through to prepare the plant for PIT and verification activities. I was shown a detailed plan for running the plant down and this was briefed to each shift at handover outlining the tasks that needed to be carried out. I asked if this was held in their document management system, and was informed that it was not, this was a personal plan. I recommended to the operator that this good practice.

Regulatory advice: operator should look to make this planning tool official in their ACP, document management system and share this good practice with other plants.

I was walked through the PIT process with the NMC for the plant, and noted areas of good practice that monthly they monitor inventory to ensure that any anomalies are pick up and dealt with in a timely manner and not left to the annual PIT. I sampled source documents and verified 4 drums randomly selected as per ore store that aligned with the PIT declarations, the store in question had individual marked positions for each drum as had been recommended for the Ore store previously. As with the ore store calibration data etc. was held by maintenance department this was requested as per the other store, noting this information had been requested but not forthcoming at a previous inspection.
In my opinion SFL met the expectations required for regulation 9 as a revised ACP was submitted in January 2023, the referenced instructions within the ACPwere implemented and followed as expected. For regulation 15, PIT and PIV procedures were in place and implemented adequately.

Nuclear Material Accountancy (NMA)
I looked at the processes SFL follow on receiving information from the plants in preparation for a PIT. The initial information recorded is then verified by internal independent inspection by the Internal inspection teams. The operator had provided evidence of training for each of the independent internal inspectors and evidence of the job briefs and sampling plans for verification. I noted that the inspector report forms are not referenced in the document management system. As this is a standard template, I recommended this should be the case as these provide a level of assurance for the plant having carried out the PIT correctly and hence is a mechanism for the operator to gain assurance. The forms, including any anomalies noted by the verification activities are passed to the Nuclear Material Accountancy and Safeguards (NMAS) team and actioned

accordingly. The operator was able to demonstrate how observations by an inspector were captured and assessed. It was noted that issues are then raised on the internal Corrective Action System (CAS). This system was demonstrated, it outlines the issue, a course for resolution (including actions and timelines) and responsible person. The resolution of these issues are measured as a site metric and provides assurance of visibility of issues.

Regarding the accountancy sample outlined in the scope document, there were several areas where clarification was required from the operator:

- Incorrect CRC numbers on reports
- Standalone delete lines for category changes
- Transfers to the environment
- PIL/MBR production

The issue of incorrect CRC numbers on the report that affect correction change for accountancy, is being addressed as part of RI 11814. The operator has investigated the root cause and why the corrected submission was missing information. This was due to an IT bug in the accountancy system, which had removed the report numbers, hence breaking the corrections chain. The second submission then deleted some of the lines required to assess the declaration, these bugs will be patched in February 2024, and ONR will monitor the Feb/Mar submissions to ensure fix has dealt with the issue.

In the sample selected there appeared to be standalone delete lines. I sought to understand the logic the operator had applied to these lines. My colleagues and I explained the concept of delete/add pairs as normally seen in accountancy. The delete in this case was used to correct an event that had not actually occurred and hence needed to be removed. We questioned that if it had not occurred why had it been recorded? SFL explained that the NUMIS system has some hard coded elements that when certain moves are entered it changes category automatically. The NUMIS accountancy system runs an inventory change report (ICR) every 24 hours and then the final one of the month corrects the final declaration. I questioned whether this was captured by QA/QC as if this is done in error there will be a significant number of lines that need to be corrected and thus produce more lines than necessary making the accounts less transparent, increasing burden on both operator and ONR QA/QC and analysis of results. This issue will be followed up at the next L4 technical meeting.

Regulatory Advice: Operator should look at the system and put in place mechanisms to remove redundant lines and look for examples of system quirks and automatically populated elements to include in training materials to better inform users.

Transfers to environment (TE), ONR questioned the late reporting of some of these lines. The operator explained that this will always be the case for liquid discharges as they are awaiting analytical results to allow reporting to ONR and EA. The assay results give rise to final reporting. ONR accepted that these would be late lines but pointed out that one such result had been 3 months late rather than in the next reporting period in line with expectations.

Regulatory Advice: Operator to consider ways to improve timeliness of reporting process.

PIL and MBR production, the NMAS team took us through the instruction 266 and job guide 03. The team followed the instruction, and the training records were in order and up to date (i.e. references in ACP and document management system). The steps were followed; however, it should be noted that RI 11814 is dealing with some issues that have not been captured in the ongoing instruction and QA/QC arrangements.In my opinion, in line with regulation 6(1-4), SFL displays adequate arrangements and implementation of arrangements to provide assurance of accountancy and control. However, there remains some issues around the logic displayed by the system no being fully transparent. this is being followed up through regular technical L4 meetings. I judged that SFL met the requirements of regulation 10(1) as adequate source documentation in support of accountancy data were present on the sampled areas and verified against. For regulation 11(1-4) and 14, in my opinion accountancy records adequately matched declarations to ONR and there was adequate explanation provided on points of clarification in the sample.

I judged I saw sufficient evidence provided in the form of training records, refresher training and job instructions to meet FSE 3.
In my opinion there was sufficient evidence provided in the form of source documentation sampled on plant and verified within the declarations from site to meet FSE 7 and 8.
For FSE 9 a MBR was produced in line with instruction - however issue with Data system being addressed by RI 11814 I judge SFL are meeting expectations.
For FSE 10 with the caveat of the RI 11814 issue that had escaped QA/QC procedures, which operator is dealing with as part of the RI 11814 resolution I judge SFL are meeting expectations.

Judgement
Based on the evidence sampled during the inspection, I judge that SFL has appropriate Physical Inventory Taking (PIT) arrangements in place and that they are adequately implemented in the MBA QBS0 –Storage areas for miscellaneous compounds, residues & sources. In my opinion SFL are compliant with regulations 6(1-4), 9, 10(1), 11(1-4), 14 and 15 in NSR19 and ONMACS expectations 3, 7, 8, 9 and 10.

Observations / Advice
Regulatory advice;1. Operator should consider means of having individual drum positions or take credit that they must check more drums per row than their verification sample.2. Operator should take credit for the assurance and planning mechanisms around PIT planning and verification in NEPS. Operator should look to make this planning tool official in their ACP, document management system and share this good practice with other plants.3. Operator should look at the system and put in place mechanisms to remove redundant lines and look for examples of system quirks and automatically populated elements to include in training materials to better inform users.4. Operator to consider ways to improve timeliness of reporting process.
Observations
I identified as good practice the use of independent verification of PIT activities.

3.3 Regulatory Issues

The following regulatory issues were raised, reviewed or closed as a result of this inspection.

Issue	Title
RI-11814	Two resubmissions of ICRs during a PIL and MBR month for two material balance areas causing a further resubmission to the IAEA after deadline.