

Docket

SEP 29 1978

SGMC:JB
70-687

NOTE TO: J. G. Partlow
FROM: J. Blaylock
SUBJECT: MEASUREMENT CONTROL PLAN EVALUATION - UNION CARBIDE

I. Introduction

Union Carbide submitted a Measurement Control Plan dated November 14, 1975 to fulfill the requirements of 10 CFR 70.57(c). The initial submittal was not immediately reviewed. However, all licensees were issued license conditions in Section 4.0 of their MPP Amendment during May 1974 to provide a basic, minimum program until the 70.57 Plans could be incorporated as a condition of license.

A preliminary review of the initial 70.57 revealed a lack of detail in all sections. Prior to requesting the licensee to review and revamp the initial submittal, the Material Control Licensing Branch revised the reviewer's guide used to evaluate the plans. During November 1977 all licensees received a letter from NRC requesting that the 70.57 plans be reviewed and upgraded in accordance with the reviewer's guide. A draft copy of the reviewer's guide was enclosed with that letter. A revised plan was submitted; this report evaluates the 70.57 plan in its present form.

II. Information Submitted and Reviewed

- Initial Measurement Control Plan submitted November 14, 1975
- Revised Measurement Control Plan submitted May 30, 1978
- Revised Measurement Control Plan submitted June 23, 1978
- Revised pages 1, 2, 5, 6, 9, 10, 16 and 18 submitted September 18, 1978
- Revised pages 15 and 16 submitted September 28, 1978

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III. Meetings, Letters, and Major Items

Letter of November 17, 1977 from J. Partlow (NRC) to J. McGovern (UC) requesting a revised 70.57 plan. A copy of reviewer's guide was enclosed with letter.

Meeting on January 12, 1978 at Tuxedo, NY - J. Blaylock, C. N. Smith, and H. Zibulsky (NRC) met with J. McGovern, H. Nast, and L. Thelin (UCC) to discuss the reviewer's guide. Suggestions were given as to the tailoring of the 70.57 plan to the Union Carbide operation.

- Telephone call of June 7, 1978 from J. Blaylock to J. McGovern requesting substantial changes to the revised 70.57 Plan.
- Telephone call of August 3, 1978 from J. Blaylock to J. McGovern requesting minor revisions to the current submittal.
- Telephone call of September 28, 1978 from J. Blaylock to J. McGovern requesting a minor revision to the Bias Section.

IV. Review of Findings

The 70.57 Plan of June 23, 1978, as revised, adequately addressed the comments raised as a result of the preliminary review of the Plan. There are other areas that deviate from the guidance of the review criteria. Union Carbide has existing license conditions granting relief from some of those requirements. Areas at variance with the review criteria include:

1. A statement is made in the Plan that no outside contractors will be used for performing SNM measurements. Current License Condition 4.8 requires an annual audit of any contractor program. With the implementation of the Measurement Control Plans, 70.57(b)(3) describes the requirement to audit contractor's programs. The licensee is aware that the requirements of 10 CFR 70.57(b)(3) must be met if an outside contractor is used. This is not at variance from either the reviewer's guide or the regulations.
2. Sampling tests will not be performed. Liquid sampling is the only sampling method used. Feed solution is filtered to remove solids. Plating solution and waste solution are stirred prior to sampling. A long tube is used, assuring a sample through the depth of solution. The sampling method is simple and falls within the intent of Section 4.3.1 of the reviewer's guide. This is at variance to the regulations; relief is provided in License Condition 4.1.

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3. No requirement has been made as to the level of verification for WCTM standards. The only standards falling into this category are well characterized target tubes used with NDA to determine total U-235 content within process targets. The initial verification guidance was a function of throughput; the throughput at this facility is so low a single measurement would satisfy the verification requirement. The licensee runs an aggressive program to measure such WCTM standards. UC characterizes WCTM standards beyond power of the test requirements as normal operating procedure. Therefore, this matter is not at variance to review criteria nor to the regulations.
4. One year ago MCL granted Union Carbide relief from the requirement to run a replicate program, provided the MUF was less than 150 grams of U or U-235. This present limited exemption is conservative, based on the licensee's historical MUF data. The throughput at Union Carbide has doubled since late 1977, yet no problem has arisen in meeting the 150 gram de minimis MUF. Hence there is no need to change this limited exemption. License Condition 4.3 grants this relief.
5. Union Carbide control charts only standards data since no replicate program is required, subject to the condition described in 4.
6. Union Carbide will use an on-the-job training approach. Non-qualified personnel will study the measurement procedure, observe a qualified operator, and perform the procedure under direct supervision until sufficient data has been generated to demonstrate qualification. Also, qualification records will be maintained by the measurement control coordinator rather than the accountability coordinator. This is not at variance to the reviewer's guide or the regulations.
7. The plan commits to running 16 standards per material balance period, yet all measurements are run as point calibrations. If point calibrations are run correctly, i.e., one standard to one unknown, or standards run before and after the process material, the standards program is acceptable. This supercedes the requirement to run 16 standards per material balance period. This is not at variance to either the reviewer's guide or the regulations.

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- 8. The plan has a section on bias, even though all measurement systems use a point calibration. Hence, the exemptions permissible in the reviewer's guide relating to de minimis values for bias calculations and bias corrections are included in License Condition 4.1, though they should never be required.
- 9. A total U measurement is performed on the process waste generated by the operation. No replicate measurements have been performed on this stream due to the radiological hazard. Union Carbide has never had to do replicate measurements on this stream. This is at variance with the reviewer's guide and the regulations. This is consistent with License Condition 4.3.

Union Carbide has always pursued an aggressive measurement control program; the historical MUF reflects this effort. Even the doubling of throughput since late 1977 has not had a commensurate effect on MUF. Union Carbide made commitments more stringent than called for in the review criteria, yet most of these commitments reflect normal operating procedures. Although some of the variations listed above relax review guide requirements, I feel that the strengths of the plan more than adequately compensate for such variations.

V. Revised MPP-2 Amendment

The Union Carbide MPP-2 Amendment to SNM-639 was revised to incorporate the 70.57 Measurement Control Plan as a condition of license. The revisions of Sections 2.0 and 4.0 served the purpose of:

- 1. Incorporating the 70.57 Plan as a condition of license,
- 2. Deleting out-dated license conditions, and
- 3. Providing new license conditions to allow exemptions from 10 CFR Part 70 Regulations.

The exemptions to 10 CFR 70.57 in 3 above fall into two types, those exemptions that are permissible in accordance with our review criteria and current exemptions under which Union Carbide operates.

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<u>Exemption</u>	<u>Review Criteria</u>	<u>Regulation</u>
De minimis for bias calculations	Page 30	70.57(b)(8)
De minimis for MUF bias corrections	Page 30	(b)(8), (10)
Sampling systematic error as zero	Page 33	(b)(4)
Materials exempt from engineering tests	Page 34	(b)(4)

License Condition 4.2 continues the current exemption from the requirements in 10 CFR 70.51(e)(4)(i) to calculate LEMUF, subject to the constraint that the plant MUF is less than 150 grams of uranium or U-235.

License Condition 4.3 continues the current exemption from the requirement in 10 CFR 70.57(b)(8)(ii) to run a replicate program for the determination of random errors.

The Measurement Control Plan was incorporated as Chapter 4.0 to the 70558 Plan, which in turn is a condition of license as per License Condition 2.1 of Amendment MPP-3.

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Jim Blaylock
Material Control Licensing Branch

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