

Dragon, Karen E. (CDC/NIOSH/EID)

From: Daniel McKeel <
Sent: Thursday, January 29, 2015 10:56 AM
To: Katz, Ted (CDC/NIOSH/OD); pl.ziemer
Cc: NIOSH Docket Office (CDC);
Dragon, Karen E. (CDC/NIOSH/EID);
Hinnefeld, Stuart L. (CDC/NIOSH/DCAS);
jmauro(melius
Sundiñ, David S. (CDC/NIOSH/DCAS); Allen, David
(CDC/NIOSH/DCAS)
Subject: GSI new evidence of AEC (NRC) Radiation Safety Noncompliance
Attachments: JWR_email_1.12.15gsi7noComply.pdf

Dear Dr. Ziemer, Ted Katz and NIOSH Docket 140 (GSI)

Ted, please circulate this Memo to all members of the TBD-6000 work group and to the Board prior to the TBD-6000 WG meeting scheduled for Feb. 5, 2015.

NIOSH Docket 140 Office: Please post this Memo to Docket 140 (GSI) on the DCAS website. The suggested title is as follows:

"Daniel W. McKeel, Jr., MD and John W. Ramspott, 'Evidence of GSI Noncompliance with AEC radiation safety regulations 1963-1971' (Jan. 29, 2015).

**Daniel W. McKeel, Jr., MD and John W. Ramspott memo to the
TBD-6000 work group and full ABRWH Board, January 29, 2015;
to be posted on the DCAS website under Docket 140 (GSI)**

[1] John W. Ramspott, GSI site expert, provided the following reference to Dan McKeel, GSI SEC-105 co-petitioner, on Monday, January 12, 2015, as follows:

Reference source document #1 -- Abstracts from ORNL-NSIC-53 (1972) (information from John Ramspott to DW McKeel Jr on January 14, 2015. See attached PDF.

AUTHOR(S) NAME(S)
R. L. Scott Operations Division
R. B. Gallaher Reactor Division
TITLE OF THE REPORT
RADIOGRAPHY INCIDENTS AND OVEREXPOSURES
REPORT NUMBER
ORNL-NSIC-53
PUBLICATION YEAR
1972, 12-1
START PAGE
7 ("Part time" radiographer comments)
END PAGE
23 (GSI Inc. Non-compliance documentation)

[303 citations (brief abstracts) relating to Radiography NDT incidents 1957-1975]

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Abstract 60008 - December 18, 1970 AEC letter to GSI 7 noncompliance matters:

1. Source storage rooms were not properly posted
2. Copy of license was not posted
3. A source was stored in an unrestricted area
4. Utilization logs were incomplete
5. Radiographic operations were conducted without a calibrated survey instrument
6. Survey records were not always maintained
7. Results of annual tests of radiographers were not available

Abstract 61438 - January 7, 1971 GSI remedial actions taken:

1. New radiation signs were obtained
2. Copy of license was posted
3. Sources are stored in a restricted room
4. New utilization logs were prepared
5. New survey meters were purchased and calibrated
6. Records are kept to assure that the sources are shielded before being stored

7. Radiographers will be tested annually and tests filed

[2] Dan McKeel had provided the initial GSI AEC citation for noncompliance on 4 matters as part of the 1,016 of material released in NRC FOIA 2010-0012:

Reference source document #2:

• ML093431298 — Letter to Eber R. Price from Gordon McMillin Regarding a Registered Letter, Directed to C.R. Whitehead, Calling Attention to Noncompliance on Certain Regulations. (4 pages, 1/18/1963)

Comment by Daniel W. McKeel, Jr., M.D.

These two references considered together provide persuasive evidence that the radiation safety program at General Steel Industries (GSI) had serious shortcomings during the entire 1963 to 1966 AEC contract period and beyond (to at least 1971) when the AEC was still reviewing their isotope NDT radiography By-Products materials license.

SC&A, NIOSH and some members of the TBD-6000 WG, including the chair Paul Ziemer former Board chair, argued to the full Board that the GSI radiation safety program and film badge programs were robust and in generally good shape after 1963 as a major reason the GSI SEC should be denied. SC&A even argued it would be unreasonable to question GSI official statements about the results of a film badge program earlier than 1964 and about the adequacy of safety program implementation. These arguments were delivered before and just preceding the final SEC 00105 9 to 8 vote to deny on December 11, 2012 in Knoxville, TN. We believe these arguments were not evidence-based and were, in fact, substantially untrue as we argue in the GSI AR that is under review: (a) The Neton [Hinnefeld/Craig Yoder-Landauer] memo of December 2013 showed that NIOSH was abandoning use of GSI film badge data because of the way control badge background was handled; (b) no evidence other than a letter from a GSI administrator and 1 film badge report supported a pre-1964 film badge program.

The GSI expert/SEC petitioner team, argues, as we did in the pending GSI SEC-105 Administrative Review (AR) submitted 4/17/2013 to HHS, that the GSI AEC By-Products materials license starting in 1962 materially misrepresented the true facts. The 11 AEC noncompliance citations we review above, n=4 in 1963 and n=7 more in 1970, show extremely lax radiation safety failures continuing at GSI from 1963 through at least early 1971, when GSI claims the latter set of 7 noncompliance citations were remedied.

However, note there is no follow up corroboration on the result of subsequent AEC inspections to show the claimed remedies was actually carried. It will be important, in our opinion, for NIOSH and the WG/SC&A to both follow up and obtain the seminal reports that are abstracted above (ABSTRACTS 60008 AND 61348 OF ORNL-NSIC-53).

Certain GSI noncompliance remedial actions are particularly troubling. Note, for example, that GSI does not attempt to tell AEC that the allegations of noncompliance were untrue. In fact, the actions taken ALL suggest strongly the noncompliance items cited WERE true and needed to be fixed. There was no evidence that GSI radiographers were being tested annually as the GSI license documents and renewals all the way through amendment 8 that extended the license to beyond plant closure date in 1974. Mr. Ramspott and Dan McKeel and numerous worker affidavits confirm these "annual tests" for radiation proficiency and safety practices as radiographers were pure mythology — they did NOT happen.

All evidence points to GSI radiographer formal classes with written tests occurred only once, ever. The GSI AEC licenses 1962-74 repeatedly refer to annual proficiency and radiation safety tests and classes taking place at GSI *for which there is no other evidence.*

In addition, it wasn't a matter of simply recalibrating existing survey instruments at GSI; the remedy "*purchase new ones and calibrate them,*" strongly indicates the survey instruments named in the numerous GSI Co-60 license renewals beginning in 1962 were false and spurious. Apparently some survey instruments AEC considered to be mandatory were NOT there.

One AEC 1970 noncompliance item states "*a source was stored in an unrestricted area.*" The remedy states the source was place in a "restricted area," but where was this area at GSI. All drawings indicate the large Co-60 source (80 curies licensed at GSI IL in 1968) was stored in the Betatron building shooting room. GSI workers, on the other hand, rolling the big Co-60 source over to the metallurgy lab.

The Betatron shooting room was "restricted" only during active shots when the 24-25 Mev x-ray/neutron containing-beam was ON. At other times, many GSI workers wandered in and out of the Betatron facilities. Why was this allowed to happen? Because, everyone assumed incorrectly due to the very poor radiation safety practices at GSI, that the Betatron shooting area was completely safe with beam off. They had never been told about particle accelerator components or accelerator bombarded concrete (see Carroll) references becoming chronically activated producing secondary unstable radionuclides that delivered radiation exposure even at "beam off" periods of time. The GSI SEC team produced persuasive evidence a number of radionuclides resulted that exhibited half-lives of weeks, months and years.

"Survey records were not always maintained" is a pretty vague statement without some quantitation as to what specific records are being referred to and what percentage were not found. If the percentage was 2% missing, that fact might be overlooked. If the percentage was 95%, then remedial action must be more active and oversight must be increased and refocused. Evidence the GSI site expert and SEC petitioner team has presented since 2005 suggests the records deficits at GSI were massive rather than trivial.

None of the relevant GSI shot logs, instrument calibration or leak test results, radiation safety tests or test results or scores, were ever looked for or found by the Board, SC&A or NIOSH.

In summary, due diligence requires the two ORNL-NSIC-53 (1972) full abstract 60008 and 61348 reports that apply to the GSI site be scrutinized in detail by the full Board and TBD-6000 WG including NIOSH and SC&A. We plan to use this new evidence to strengthen our arguments to HHS and others that SEC-00105 should be approved for GSI from October 1, 1952 through the end of 1993. That is, the Board recommendation on 12/11/12 to deny SEC-105 should be reversed.

Thank you for your consideration.

Sincerely,

-- **Dan McKeel and John W. Ramspott** 1.29.2015

Daniel W. McKeel, Jr., MD
GSI, Dow and TCC SEC co-petitioner
Cofounder SINEW

From: john ramspott

To: Daniel McKeel

Cc: john ramspott

Subject: Page 23 clearly identifies the 7 GSI "Non-compliances"

Date: Mon, Jan 12, 2015 5:50 pm

Page 23 below identifies the 7 GSI "Non-compliances" (1970)

PAGE 23

41534 *CONTINUED*

INTO POSITION BOTH DISCOVERED SOURCE WAS EXPOSED. A RECEIVED 3 REM WHOLE BODY, 600 REM RIGHT HAND AND FOREARM, AND 45 REM TO LEFT HAND AND FOREARM. OPERATOR A AND THE RADIOGRAPHER IN CHARGE WERE SUSPENDED FOR 4 DAYS WITHOUT PAY.

AVAILABILITY - USAEC PUBLIC DOCUMENT ROOM, 1717 H ST., WASHINGTON, D. C. 20545 (25 CENTS/PAGE)

*INCIDENT, EXPOSURE + FAILURE, OPERATOR ERROR + SURVEY, RADIATION + PERSONNEL EXPOSURE, RADIATION + *INCIDENT, HUMAN ERROR + *OPERATING EXPERIENCE

37498

ELECTRIC BOAT DIVISION CITED BY AEC FOR OVEREXPOSURE OF RADIOGRAPHY PERSONNEL GENERAL DYNAMICS CORP., ELECTRIC BOAT DIVISION, GROTON, CONN. 1 PAGE, ATOMIC ENERGY CLEARING HOUSE, 15137J, PAGE 17 (SEPTEMBER 15, 1969)

BECAUSE OF A MISUNDERSTOOD ORAL REPLY A RADIOGRAPHER AND HELPER WERE OVEREXPOSED TO AN IRIIDIUM-192 SOURCE. THE SOURCE WAS CONSIDERED TO BE IN ITS SHIELDED CONTAINER, AND THE SOURCE TUBE ASSEMBLY WAS DISCONNECTED WHEN IT WAS DISCOVERED THAT THE SOURCE WAS NOT SEATED IN ITS SHIELD. IF THE FOLLOWUP SURVEY HAD TAKEN PLACE, THE EXPOSURE COULD HAVE BEEN PREVENTED.

*FAILURE, OPERATOR ERROR + *PERSONNEL EXPOSURE, RADIATION + *SHIELDING + IRIIDIUM

61907

OVEREXPOSURE OF EMPLOYEE AT GENERAL DYNAMICS GENERAL DYNAMICS, ELECTRIC BOAT DIVISION, GROTON, CONNECTICUT 4 PAGES, LETTER - GENERAL DYNAMICS TO DIVISION OF COMPLIANCE (AEC) - DECEMBER 22, 1970

CONSTRUCTION WAS PROCEEDING NORMALLY. THE SOURCE WAS CRANKED IN, AND THE STORED LIGHT WAS OBSERVED BY 2 WORKERS. ONE OF THEM THEN PROCEEDED INTO THE REACTOR COMPARTMENT TO CHECK THE CAMERA. HIS SURVEY METER WAS SET ON THE X-1 SCALE INSTEAD OF THE X-10. WHEN PLACED AT THE SIDE OF THE CAMERA, IT PEGGED, BUT THE MAN FAILED TO RECOGNIZE THIS AS ABNORMAL. HIS EXPOSURE WAS 4455 MR. CHECKS OF EQUIPMENT INDICATED IT WORKED PROPERLY. WORKERS INSTRUCTED IN PROPER USE OF SURVEY EQUIPMENT.

RADIOGRAPHIC OPERATIONS IN THE REACTOR COMPARTMENT OF A SUBMARINE UNDER CONSTRUCTION WAS PROCEEDING NORMALLY. AVAILABILITY DATA

INCIDENT, EXPOSURE + FAILURE, EQUIPMENT + *FAILURE, OPERATOR ERROR + SOURCE, RADIATION + *PERSONNEL EXPOSURE, RADIATION

60008

GENERAL STEEL INDUSTRIES CITED FOR NONCOMPLIANCE U.S. ATOMIC ENERGY COMMISSION, DIVISION OF COMPLIANCE 2 PAGES, LETTER - DIVISION OF COMPLIANCE (AEC) TO GENERAL STEEL INDUSTRIES - DECEMBER 18, 1970

GENERAL STEEL INDUSTRIES WAS CITED FOR 7 ITEMS OF NONCOMPLIANCE. SOURCE STORAGE ROOMS WERE NOT PROPERLY POSTED. COPY OF LICENSE WAS NOT POSTED. A SOURCE WAS STORED IN AN UNRESTRICTED AREA. UTILIZATION LOGS WERE INCOMPLETE. RADIOGRAPHIC OPERATIONS WERE CONDUCTED WITHOUT A CALIBRATED SURVEY INSTRUMENT. SURVEY RECORDS WERE NOT ALWAYS MAINTAINED. RESULTS OF ANNUAL TESTS OF RADIOGRAPHERS WERE NOT AVAILABLE.

AVAILABILITY - USARC PUBLIC DOCUMENT ROOM, 1717 H ST., WASHINGTON, D.C. 20545 (25 CENTS/PAGE, \$1.00-MIN. CHARGE)

*FAILURE, ADMINISTRATIVE CONTROL + SOURCE, RADIATION + FAILURE, OPERATOR ERROR + INFORMATION RETRIEVAL + INSTRUMENT CALIBRATION + *RECORDS + RADIATION EXPOSURE, RECORD KEEPING + SURVEY, RADIATION

61438

CORRECTIVE STEPS TAKEN BY GENERAL STEEL INDUSTRY GENERAL STEEL INDUSTRIES, INC., ILLINOIS 2 PAGES, LETTER - GENERAL STEEL INDUSTRIES TO DIVISION OF COMPLIANCE (AEC) - JANUARY 7, 1971

THE FOLLOWING STEPS WERE TAKEN TO CORRECT NON-COMPLIANCES. NEW RADIATION SIGNS WERE OBTAINED. COPY OF LICENSE WAS POSTED. SOURCES ARE STORED IN A RESTRICTED ROOM. NEW UTILIZATION LOGS WERE PREPARED. NEW SURVEY METERS WERE PURCHASED AND CALIBRATED. RECORDS ARE KEPT TO ASSURE THAT THE SOURCES ARE SHIELDED BEFORE BEING STORED. RADIOGRAPHERS WILL BE TESTED ANNUALLY AND TESTS FILED.

*ADMINISTRATIVE CONTROL + *SOURCE, RADIATION + TESTING + INSTRUMENT CALIBRATION + *RADIATION SAFETY AND CONTROL

10196
OVEREXPOSURE UNREPORTED BECAUSE OF UNRELIABLE READINGS
GENERAL TESTING COMPANY, LISBON, OHIO
1 PAGE, ATOMIC ENERGY CLEARING HOUSE, 12(20), PAGE 35, (MAY 16, 1966)

GARDAY FILM BADGE SERVICE SHOWED A 3.5-REM EXPOSURE FOR ONE INDIVIDUAL, WHILE THE CONTROL BADGES FOR FOUR INDIVIDUALS SHOWED NO EXPOSURE. THIS WAS NOT REPORTED BECAUSE IT WAS THOUGHT IN ERROR.

Here is the "earlier" McKeel FOIA reference to GSI's Non-compliance 1963 :

- ML093431298 - Letter to Eber R. Price from Gordon McMillin Regarding a Registered Letter, Directed to Mr. C. P. Whitehead, Calling Attention to Noncompliance on Certain Regulations. (4 page(s), **1/18/1963**)