

TRANSMISSION VERIFICATION REPORT

TIME : 03/16/2005 16:56  
NAME : USNRC  
FAX : 6308299782  
TEL : 6308299782

DATE, TIME : 03/16 16:56  
FAX NO. /NAME : 85738844847  
DURATION : 00:00:41  
PAGE(S) : 02  
RESULT : OK  
MODE : STANDARD  
ECM

NRC FORM 316 (K11)  
(2-2002)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

TELEFAX TRANSMITTAL

DATE: 3/16/05 NUMBER OF PAGES: 2  
(Including this page)

SEND TO: JACKIE JONES

LOCATION: UNIVERSITY OF MISSOURI-COLUMBIA

FAX NUMBER: 573-884-4847  VERIFY BY CALLING SENDER

FROM: (SENDER) COLLEEN CASEY

TELEPHONE NUMBER: 630-829-9841 FAX NUMBER: 630-829-9982

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE

*Please give me a call. Thank you.*  
*D. A. O.A.*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

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MESSAGE

*Please give me a call. Thank you.*

*Colleen Carol Casey*

NOTICE

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this message is not the intended recipient or the employee responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by telephone and return the original to the above address, by U.S. Mail. Thank you.

**COLLEEN CAROL CASEY  
MATERIALS LICENSING BRANCH  
UNITED STATES NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4352  
OFFICE: (630)-829-9841 FAX: (630) 829-9782 or (630) 515-1259

**CONVERSATION RECORD**  
**ACTUALLY FAXED? YES.**

TIME

DATE

**March 16, 2005**

NAME OF PERSON(S) CONTACTED

ORGANIZATION

TELEPHONE NO.

Jacquelyn K. Jones, Vice Chancellor for Curators of the University of Missouri 573-882-4097  
Fax no. (573)-884-4847

SUBJECT

License No.: 24-00513-32 Control No.: 313997

SUMMARY

My supervisor instructed me to contact you to confirm that you received my fax and voicemail message last week and to find out what your intentions are with respect to a response (i.e., are you going to continue to pursue authorizing Mr. Crawford at this time or do you have another proposed RSO candidate to put forth?).

We will have to close-out this amendment request no later than March 30, 2005, with a VOID (administrative procedure described below) if necessary, but we can always control in your response on or after that date, "reset the calendar" and continue the review that way. Please advise me of your intentions at this point so I can let my supervisor know.

ACTION REQUIRED

If we receive no response or cannot complete our review by March 30, 2005, we will void this request in order to enable you to prepare a quality application without time constraints. Submit the requested information to my attention by referencing control number **313997** to facilitate proper handling. Upon receipt of your response we will resume our review. Address your written response to my attention at the above address.

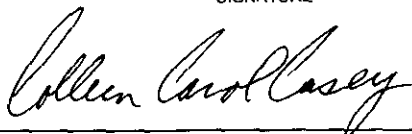
PLEASE NOTE THAT A "VOID" IS AN ADMINISTRATIVE PROCEDURE THAT PUTS YOUR AMENDMENT REQUEST "ON HOLD" (TAKES IT OUT OF OUR ACTIVE CASEWORK DATABASE) UNTIL YOU REACTIVATE IT VIA SUBMISSION OF A WRITTEN RESPONSE. IT "BUYS" YOU TIME TO PREPARE A QUALITY RESPONSE. **PLEASE DIRECT ANY QUESTIONS YOU MAY HAVE TO ME AT (630) 829-9841 or (800) 522-3025.**

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Colleen Carol Casey



February 17, 2005

(oops - missing the pen 3<sup>rd</sup>)

2 OF 2



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

TELEFAX TRANSMITTAL

DATE: 3/8/05

NUMBER OF PAGES: 4  
(including this page)

SEND TO: JACKIE JONES

LOCATION: UNIVERSITY OF MISSOURI- COLUMBIA

FAX NUMBER: 573 - 884 - 4847  VERIFY BY CALLING SENDER

FROM: (SENDER) COLLEEN CASEY

TELEPHONE NUMBER: 630 - 829 - 9841 FAX NUMBER: 630 - -

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE

*Please call me to discuss this after 1pm Wed. afternoon,  
3/9/05 or if you have questions.*

*Thank you,  
Colleen Carol Casey*

NOTICE

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, or exempt from disclosure under applicable law. If the reader of this message is not the intended recipient or the employee responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify the sender immediately by telephone and return the original to the above address, by U.S. Mail. Thank you.

TRANSMISSION VERIFICATION REPORT

TIME : 03/08/2005 19:39  
NAME : USNRC  
FAX : 6308299782  
TEL : 6308299782

DATE, TIME : 03/08 19:37  
FAX NO. / NAME : 85738844847  
DURATION : 00:01:52  
PAGE(S) : 04  
RESULT : OK  
MODE : STANDARD  
ECM

NRC FORM 386 (R11)  
(2 2002)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

TELEFAX TRANSMITTAL

DATE: 3/8/05 NUMBER OF PAGES: 4  
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SEND TO: JACKIE JONES

LOCATION: UNIVERSITY OF MISSOURI- COLUMBIA

FAX NUMBER: 573 - 884 - 4847  VERIFY BY CALLING SENDER

FROM: COLLEEN CASEY  
(SENDER)

TELEPHONE NUMBER: 630 - 829 - 9841 FAX NUMBER: 630 - -

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE

*Please call me to discuss this after 1 pm Wed. afternoon  
3/9/05 or if you have questions,*

**COLLEEN CAROL CASEY  
MATERIALS LICENSING BRANCH  
UNITED STATES NUCLEAR REGULATORY COMMISSION**

REGION III  
2443 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4352  
OFFICE: (630)-829-9841 FAX: (630) 829-9782 or (630) 515-1259

**CONVERSATION RECORD**

**ACTUALLY FAXED? YES.**

TIME

*C3 left VM msg - 6:45 pm  
on 3/8/05*

DATE

**March 8, 2005**

NAME OF PERSON(S) CONTACTED

ORGANIZATION

TELEPHONE NO.

Jacquelyn K. Jones, Vice Chancellor for Curators of the University of Missouri 573-882-4097  
Fax no. (573)884-4847

**SUBJECT**

License No.: 24-00513-32 Control No.: 313997

**SUMMARY**

We have reviewed your letter dated March 4, 2005, in response to our conversation record dated February 17, 2005, concerning your request for an amendment to your byproduct materials license and find that we need additional information as follows:

Your letters request that the Radiation Safety Officer (RSO) be changed to Willie (Jack) Matthew Crawford.

1. It still appears that Mr. Crawford's experience in managing a large Type A medical broad scope license has been too brief and limiting to consider authorizing him as RSO at this time. The vast bulk of his training, education and experience have been in the Navy nuclear program and nuclear reactor engineering industries, which are very different from this licensed byproduct materials program. His degree in Nuclear Medicine Technology is still the primary credential that translates to your licensed program but that is insufficient to support his application as a Type A medical broad scope RSO, even when combined with several months work in the broad scope program.

We still do not believe that Mr. Crawford's tenure of less than one year working in a large Type A medical broad scope program coupled with a one week course and self study reading is an adequate substitute for working under the supervision of a qualified RSO for one or more years. The "on-the-job" experiences afforded by internal audits, surveys, program management, NRC inspections, preparing licensing correspondence, evaluating authorized user qualifications/protocols/ facilities and the many, varied day-to-day challenges posed to an RSO in your type of licensed program cannot be accelerated or substituted for.

The support systems and administrative mechanisms proposed for Mr. Crawford involving Dr. Jurrison, Mr. Ashbrook and your consulting group still do not mitigate our concern.

The differences between a large Type A medical broad scope licensed program and nuclear reactor programs in the U.S. Navy/commercial nuclear power plant outweigh the relatively few similarities between the two.

We do not comprehend how many years of experience in nuclear Navy and commercial nuclear power serve to prepare an individual to manage a large Type A medical broad scope licensed program that also includes portable gauging devices, self-shielded irradiators, and many research users of a wide variety of radioactive materials in animal, in vitro, and human studies. **Please explain specifically how Mr. Crawford's nuclear Navy and commercial nuclear power plant work prepared him to work as RSO for this license.**

2. **Please confirm** that Mr. Crawford's duties and responsibilities as RSO will include all of the items described in Appendix E in NUREG 1556, Vol. 1, Rev. 1; Appendix H in NUREG 1556, Vol. 5; Appendix I in NUREG 1556, Vol 7; and Appendix I in NUREG 1556, Vol. 9.
3. **Please describe or list** the specific duties Mr. Crawford has already acquired experience in as an HP/Deputy RSO- in- training under your broad scope licensed program in the time frame from March 1, 2004, to March 4, 2005 (or later).
4. Your letter dated March 4, 2005, emphasizes that Mr. Crawford spent his time as Health Physicist/Deputy RSO - in- training from March 1, 2004, to March 4, 2005, primarily updating the Radiation Safety Manual; reviewing about 40 protocols for the IRB and attending meetings, training activities, completing developmental assignments, etc.

10 CFR 35.50(b)(1)(ii) requires, in part, that an individual fulfilling the responsibilities of the Radiation Safety Officer as provided in 10 CFR 35.24 to be an individual who has completed a structured educational program consisting of..

"*One year of full-time (emphasis added) radiation safety experience under the supervision of the individual identified as the Radiation Safety Officer on a Commission or Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of byproduct material involving the following-*

- (A) Shipping, receiving, and performing related radiation surveys;
- (B) Using and performing checks for proper operation of instruments used to determine the activity of dosages, survey meters, and instruments used to measure radionuclides;
- (C) Securing and controlling byproduct material;
- (D) Using administrative controls to avoid mistakes in the administration of byproduct material;
- (E) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures;
- (F) Using emergency procedures to control byproduct material; and
- (G) Disposing of byproduct material."

**Please explain** how Mr. Crawford completed one year of full-time radiation safety experience under the supervision of the individual identified as the Radiation Safety Officer on a Commission license that authorizes similar type(s) of use(s) of byproduct material involving the tasks listed above in 10 CFR 35.50(b)(1)(ii)(A) through (G), inclusive, while, at the same time, from March 1, 2004, to the date of your letter, March 4, 2005, he was updating the Radiation Safety Manual, reviewing about 40 protocols for the IRB and attending meetings, training activities, completing developmental assignments, etc.

Please note that the training an individual receives in the course of completing formal educational studies, such as college work, may not be counted as time spent acquiring work experience based upon the knowledge gained by the completion of said college work.

5. As an alternative to responding to the above items, please submit the name, qualifications, delegation of authority, 10 CFR 35.24(b) letter, and appropriate supporting documentation of a proposed RSO for this license. Please do not submit information that we must protect from public disclosure, per 10 CFR 2.390, such as social security numbers, dates of birth, resumes, curricula vitae, college transcripts, and so on.

In preparing your response, please also be reminded of the provisions in 10 CFR 30.9(a), "Completeness and accuracy of information,"...(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects."

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The enclosed license document is exempt from public disclosure in accordance with 10 CFR 2.390, because its disclosure to unauthorized individuals could present a security vulnerability.

---

ACTION REQUIRED

Submit the requested information to my attention by referencing control number **313997** to facilitate proper handling . Upon receipt of your response we will resume our review. Address your written response to my attention at the above address.

**PLEASE DIRECT ANY QUESTIONS YOU MAY HAVE TO ME AT (630) 829-9841 or (800) 522-3025.**

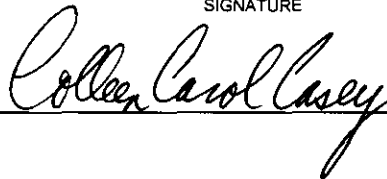
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NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Colleen Carol Casey



March 8, 2005

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4 OF 4



TRANSMISSION VERIFICATION REPORT

TIME : 02/17/2005 16:56  
NAME : USNRC  
FAX : 6308299782  
TEL : 6308299782

DATE, TIME 02/17 16:56  
FAX NO./NAME 05738844847  
DURATION 00:00:44  
PAGE(S) 02  
RESULT OK  
MODE STANDARD  
ECM

FORM NRC-100 (Rev. 12-2007)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

TELEFAX TRANSMITTAL

*Corrected last page*

*2*

DATE: 2/17/2005

NUMBER OF PAGES:  
(including this page)

*4*

SEND TO: JACQUELYN K. JONES

LOCATION: UNIVERSITY OF MISSOURI - COLUMBIA

FAX NUMBER: 573-884-4847  VERIFY BY CALLING SENDER

FROM: COLLEEN CAROL CASEY  
(SENDER)

TELEPHONE NUMBER: 630-829-9841 FAX NUMBER: 630-829-9782

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE

*Please call me either 2/18/05 or 2/28/05 + after if you have further questions.  
Thank you very much.*

TRANSMISSION VERIFICATION REPORT

TIME : 02/17/2005 16:37  
NAME : USNRC  
FAX : 6308299782  
TEL : 6308299782

DATE, TIME	02/17 16:32
FAX NO./NAME	85738844847
DURATION	00:04:28
PAGE(S)	04
RESULT	OK
MODE	STANDARD ECM

NRC FORM 386 (R111)  
(7-2002)



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
801 Warrenville Road, Suite 255  
Lisle, Illinois 60532-4351

TELEFAX TRANSMITTAL

DATE: 2/17/2005 NUMBER OF PAGES: 4  
(including this page)

SEND TO: JACQUELYN K. JONES

LOCATION: UNIVERSITY OF MISSOURI - COLUMBIA

FAX NUMBER: 573-884-4847  VERIFY BY CALLING SENDER

FROM: COLLEEN CAROL CASEY  
(SENDER)

TELEPHONE NUMBER: 630-829-9841 FAX NUMBER: 630-829-9782

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE  
*Please call me under 2/18/05 or 2/20/05 + after if you have further questions.  
Thank you very much.*



TELEFAX TRANSMITTAL

*Corrected last page*

*2*

DATE: 2/17/2005

NUMBER OF PAGES:  
(including this page)

*4*

SEND TO: JACQUELYN K. JONES

LOCATION: UNIVERSITY OF MISSOURI - COLUMBIA

FAX NUMBER: 573 - 884 - 4847  VERIFY BY CALLING SENDER

FROM:  
(SENDER) COLLEEN CAROL CASEY

TELEPHONE NUMBER: 630 - 829 - 9841 FAX NUMBER: 630 - 829 - 9782

If you do not receive the complete fax transmittal, please contact the sender as soon as possible at the telephone number provided above.

MESSAGE

*Please call me either 2/18/05 or 2/28/05 + after if you have further questions.*

*Thank you very much.*

*Colleen Carol Casey*

*- Please submit a proposal for an interim RSO or acting RSO.*

*Thank you. Colleen Carol Casey*

NOTICE *2/17/05*

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**COLLEEN CAROL CASEY**  
**MATERIALS LICENSING BRANCH**  
**UNITED STATES NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4352  
OFFICE: (630)-829-9841 FAX: (630) 829-9782 or (630) 515-1259

---

**CONVERSATION RECORD**

|TIME

|DATE

**ACTUALLY FAXED? YES.**

**3:18pm**

**February 17, 2005**

---

NAME OF PERSON(S) CONTACTED

ORGANIZATION

TELEPHONE NO.

Jacquelyn K. Jones, Vice Chancellor for Curators of the University of Missouri 573-882-4097  
Fax no. (573-884-4847

---

SUBJECT

License No.: 24-00513-32 Control No.: 313997

---

SUMMARY

We have reviewed your letters dated December 28, 2004, and January 19, 2005, requesting an amendment to your byproduct materials license and find that we need additional information as follows:

Your letters request that the Radiation Safety Officer (RSO) be changed to Willie (Jack) Matthew Crawford.

It appears that Mr. Crawford's experience in managing a large Type A medical broad scope license has been too brief and limiting to consider authorizing him as RSO at this time. The vast bulk of his training, education and experience have been in the Navy nuclear program and nuclear reactor engineering industries, which are very different from this licensed byproduct materials program. His degree in Nuclear Medicine Technology is the primary credential that translates to your licensed program but that is insufficient to support his application as a Type A medical broad scope RSO, even when combined with several months work in the broad scope program.

**Please submit** the name and qualifications of a proposed RSO for this license. **Please do not** submit information that we must protect from public disclosure, per 10 CFR 2.390, such as social security numbers, dates of birth, resumes, curricula vitae, college transcripts, and so on.

**Please refer** to Item 8.7.3 in NUREG 1556, Vol., 11, and the corresponding item in each appropriate NUREG 1556 document appropriate for this license (Volumes 1, 5, 9, 7, and 11), as well as 10 CFR Parts 33 and 35.

In addition, several discrepancies and deficiencies were noted in the above letters as follows:

1. 10 CFR 35.24(b) requires, in part, that a licensee's management shall appoint a Radiation Safety Officer who agrees, in writing, to be responsible for implementing the radiation protection program.

**Please submit** a letter, currently dated and signed by the proposed RSO stating that s/he accepts the position as RSO for this license and that s/he understands the duties and responsibilities associated with this position.

2. **Please submit** appropriate documentation, including preceptor forms, as applicable, showing that your proposed RSO is qualified pursuant to 10 CFR 35.50, 35.57, 35.900 and 35.59.
3. **Please confirm** that the proposed RSO has reviewed and understands this license and the documents supporting it; all NUREG 1556 documents that pertain to this licensed program, including but not limited to, Vols. 1, 5, 7, 9 and 11; and the other regulations and documents that Mr. Crawford previously attested to reviewing.
4. We are concerned that only staff members of Engelhardt & Associates who have previous experience as Radiation Safety Officers in Type A broad scope medical programs comparable to this one would advise the proposed RSO. We are also concerned about the minimum, actual "on-site" time that such qualified consultant representatives would spend assisting the proposed RSO.
5. We are concerned that the "Deputy RSO training" referred to is undefined. What did this training consist of? What were Mr. Crawford's frequency and quality of supervision under Ms. Litinski? What were the duties and responsibilities? Was it a formal program with a syllabus and milestone target dates for completion? Who is Pete Ashbrook, which department is he Director of, and what was his involvement in this training program? **Please respond** to these questions and explain in greater detail, if or when you request that Mr. Crawford apply to become RSO over this license again.
6. We do not know what an "Independent Review Board" is. Mr. Crawford's supporting documents state that he was involved in this Board. **Please explain** in greater detail what this Board is and what his involvement consisted of if or when you request that Mr. Crawford apply to become RSO over this license again.
7. We do not believe that Mr. Crawford's tenure of less than one year working in a large Type A medical broad scope program coupled with a one week course and self study reading is an adequate substitute for working under the supervision of a qualified RSO for at least several years. The "on-the-job" experiences afforded by internal audits, surveys, program management, NRC inspections, preparing licensing correspondence, evaluating authorized user qualifications/protocols/ facilities and the many, varied day-to-day challenges posed to an RSO in your type of licensed program cannot be accelerated or substituted for.

The support systems and administrative mechanisms proposed for Mr. Crawford involving Dr. Jurrison and your consulting group do not mitigate our concern.

8. The dates of Mr. Crawford's employment in his position as Deputy RSO trainee appear to conflict in his application documents. Attachment A states he worked for you from "2003-current" and another page in Attachment A shows he was employed at the Callaway Nuclear Plant from "2000 - 2004." Was Mr. Crawford employed by both the Callaway Nuclear Plant and the University of Missouri - Columbia at the same time in 2003 - 2004? Also, Attachment B states, "I was hired in March of 2004 to fill a dual

position of Health Physicist and Deputy Radiation Safety Officer - in training." **Please explain** the employment date discrepancy if or when you request that Mr. Crawford apply to become RSO over this license again. **Please also specify** how much of Mr. Crawford's time was devoted to the HP position and how much time was devoted to the Deputy Radiation Safety Officer - in training position if or when you request that Mr. Crawford apply to become RSO over this license again.

9. **Please describe** concisely what staffing resources in the Radiation Safety Office will be available to the proposed RSO.

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS.

The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at 800-397-4209 or 301-415-4737 or [pdr@nrc.gov](mailto:pdr@nrc.gov).

ACTION REQUIRED

*Correction*

*- We will not void this yet. Colleen Carol Casey 2/17/05*  
~~As we cannot issue an amendment at this time we are voiding this request in order to enable you to prepare a quality application without time constraints. Submit the requested information to my attention by referencing control number 313997 to facilitate proper handling. Upon receipt of your response we will resume our review. Address your written response to my attention at the above address.~~

~~PLEASE NOTE THAT A "VOID" IS AN ADMINISTRATIVE PROCEDURE THAT PUTS YOUR AMENDMENT REQUEST "ON HOLD" (TAKES IT OUT OF OUR ACTIVE CASEWORK DATABASE) UNTIL YOU REACTIVATE IT VIA SUBMISSION OF A WRITTEN RESPONSE. IT "BUYS" YOU TIME TO PREPARE A QUALITY RESPONSE AND IS GENERALLY REGARDED AS A "GOOD THING."~~

**PLEASE DIRECT ANY QUESTIONS YOU MAY HAVE TO ME AT (630) 829-9841 or (800) 522-3025.**

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Colleen Carol Casey

*Colleen Carol Casey*

February 17, 2005

*lit/ fax dated 3/4/05*

**COLLEEN CAROL CASEY  
MATERIALS LICENSING BRANCH  
UNITED STATES NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4352  
OFFICE: (630)-829-9841 FAX: (630) 829-9782 or (630) 515-1259

---

<b>CONVERSATION RECORD</b>	TIME	DATE
<b>ACTUALLY FAXED? YES.</b>	<b>3:18pm</b>	<b>February 17, 2005</b>

---

NAME OF PERSON(S) CONTACTED	ORGANIZATION	TELEPHONE NO.
Jacquelyn K. Jones, Vice Chancellor for Curators of the University of Missouri		573-882-4097 Fax no. (573-884-4847)

---

SUBJECT  
License No.: 24-00513-32 Control No.: 313997

---

SUMMARY

We have reviewed your letters dated December 28, 2004, and January 19, 2005, requesting an amendment to your byproduct materials license and find that we need additional information as follows:

Your letters request that the Radiation Safety Officer (RSO) be changed to Willie (Jack) Matthew Crawford.

It appears that Mr. Crawford's experience in managing a large Type A medical broad scope license has been too brief and limiting to consider authorizing him as RSO at this time. The vast bulk of his training, education and experience have been in the Navy nuclear program and nuclear reactor engineering industries, which are very different from this licensed byproduct materials program. His degree in Nuclear Medicine Technology is the primary credential that translates to your licensed program but that is insufficient to support his application as a Type A medical broad scope RSO, even when combined with several months work in the broad scope program.

*They still want Crawford!*

**Please submit** the name and qualifications of a proposed RSO for this license. **Please do not** submit information that we must protect from public disclosure, per 10 CFR 2.390, such as social security numbers, dates of birth, resumes, curricula vitae, college transcripts, and so on.

**Please refer** to Item 8.7.3 in NUREG 1556, Vol., 11, and the corresponding item in each appropriate NUREG 1556 document appropriate for this license (Volumes 1, 5, 9, 7, and 11), as well as 10 CFR Parts 33 and 35.

In addition, several discrepancies and deficiencies were noted in the above letters as follows:

1. ✓ 10 CFR 35.24(b) requires, in part, that a licensee's management shall appoint a Radiation Safety Officer who agrees, in writing, to be responsible for implementing the radiation protection program.

**Please submit** a letter, currently dated and signed by the proposed RSO stating that s/he accepts the position as RSO for this license and that s/he understands the duties and responsibilities associated with this position.

*Dr. Westgate ltr 3/3/05* *D. Jurrison ltr 3/3/05*  
*RSC chair*

*incomplete*

**Please submit** appropriate documentation, including preceptor forms, as applicable, showing that your proposed RSO is qualified pursuant to 10 CFR 35.50, 35.57, 35.900 and 35.59.

*Ashbrook ltr 3/4/05* *Malby ltr 3/4/05* *Greenman ltr 3/4/05*

3. **Please confirm** that the proposed RSO has reviewed and understands this license and the documents supporting it; all NUREG 1556 documents that pertain to this licensed program, including but not limited to, Vols. 1, 5, 7, 9 and 11; and the other regulations and documents that Mr. Crawford previously attested to reviewing.

4. We are concerned that only staff members of Engelhardt & Associates who have previous experience as Radiation Safety Officers in Type A broad scope medical programs comparable to this one would advise the proposed RSO. We are also concerned about the minimum, actual "on-site" time that such qualified consultant representatives would spend assisting the proposed RSO.

*"Danced around and not really addressed"*

5. We are concerned that the "Deputy RSO training" referred to is undefined. What did this training consist of? What were Mr. Crawford's frequency and quality of supervision under Ms. Litinski? What were the duties and responsibilities? Was it a formal program with a syllabus and milestone target dates for completion? Who is Pete Ashbrook, which department is he Director of, and what was his involvement in this training program? **Please respond** to these questions and explain in greater detail, if or when you request that Mr. Crawford apply to become RSO over this license again.

6. We do not know what an <sup>T upo</sup> "Independent Review Board" is. Mr. Crawford's supporting documents state that he was involved in this Board. **Please explain** in greater detail what this Board is and what his involvement consisted of if or when you request that Mr. Crawford apply to become RSO over this license again.

7. We do not believe that Mr. Crawford's tenure of less than one year working in a large Type A medical broad scope program coupled with a one week course and self study reading is an adequate substitute for working under the supervision of a qualified RSO for at least several years. The "on-the-job" experiences afforded by internal audits, surveys, program management, NRC inspections, preparing licensing correspondence, evaluating authorized user qualifications/protocols/ facilities and the many, varied day-to-day challenges posed to an RSO in your type of licensed program cannot be accelerated or substituted for.

The support systems and administrative mechanisms proposed for Mr. Crawford involving Dr. Jurrison and your consulting group do not mitigate our concern.

8. The dates of Mr. Crawford's employment in his position as Deputy RSO trainee appear to conflict in his application documents. Attachment A states he worked for you from "2003-current" and another page in Attachment A shows he was employed at the Callaway Nuclear Plant from "2000 - 2004." Was Mr. Crawford employed by both the Callaway Nuclear Plant and the University of Missouri - Columbia at the same time in 2003 - 2004? Also, Attachment B states, "I was hired in March of 2004 to fill a dual



*not specified*

position of Health Physicist and Deputy Radiation Safety Officer - in training." **Please explain** the employment date discrepancy if or when you request that Mr. Crawford apply to become RSO over this license again. **Please also specify** how much of Mr. Crawford's time was devoted to the HP position and how much time was devoted to the Deputy Radiation Safety Officer - in training position if or when you request that Mr. Crawford apply to become RSO over this license again.

9. **Please describe** concisely what staffing resources in the Radiation Safety Office will be available to the proposed RSO.

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS.

The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at 800-397-4209 or 301-415-4737 or [pdr@nrc.gov](mailto:pdr@nrc.gov).

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ACTION REQUIRED

As we cannot issue an amendment at this time we are voiding this request in order to enable you to prepare a quality application without time constraints. Submit the requested information to my attention by referencing control number **313997** to facilitate proper handling. Upon receipt of your response we will resume our review. Address your written response to my attention at the above address.

*pl. needed? not go this yet*

~~PLEASE NOTE THAT A "VOID" IS AN ADMINISTRATIVE PROCEDURE THAT PUTS YOUR AMENDMENT REQUEST "ON HOLD" (TAKES IT OUT OF OUR ACTIVE CASEWORK DATABASE) UNTIL YOU REACTIVATE IT VIA SUBMISSION OF A WRITTEN RESPONSE. IT "BUYS" YOU TIME TO PREPARE A QUALITY RESPONSE AND IS GENERALLY REGARDED AS A "GOOD THING."~~

**PLEASE DIRECT ANY QUESTIONS YOU MAY HAVE TO ME AT (630) 829-9841 or (800) 522-3025.**

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NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Colleen Carol Casey

February 17, 2005

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**COLLEEN CAROL CASEY  
MATERIALS LICENSING BRANCH  
UNITED STATES NUCLEAR REGULATORY COMMISSION**  
REGION III  
2443 WARRENVILLE ROAD  
LISLE, ILLINOIS 60532-4352  
OFFICE: (630)-829-9841 FAX: (630) 829-9782 or (630) 515-1259

---

**CONVERSATION RECORD**

|TIME

|DATE

**ACTUALLY FAXED? YES.**

**March 8, 2005**

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NAME OF PERSON(S) CONTACTED

ORGANIZATION

TELEPHONE NO.

Jacquelyn K. Jones, Vice Chancellor for Curators of the University of Missouri 573-882-4097  
Fax no. (573-884-4847)

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SUBJECT

License No.: 24-00513-32 Control No.: 313997

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SUMMARY

We have reviewed your letter dated March 4, 2005, in response to our conversation record dated February 17, 2005, concerning your request for an amendment to your byproduct materials license and find that we need additional information as follows:

Your letters request that the Radiation Safety Officer (RSO) be changed to Willie (Jack) Matthew Crawford.

1. It still appears that Mr. Crawford's experience in managing a large Type A medical broad scope license has been too brief and limiting to consider authorizing him as RSO at this time. The vast bulk of his training, education and experience have been in the Navy nuclear program and nuclear reactor engineering industries, which are very different from this licensed byproduct materials program. His degree in Nuclear Medicine Technology is still the primary credential that translates to your licensed program but that is insufficient to support his application as a Type A medical broad scope RSO, even when combined with several months work in the broad scope program.

We still do not believe that Mr. Crawford's tenure of less than one year working in a large Type A medical broad scope program coupled with a one week course and self study reading is an adequate substitute for working under the supervision of a qualified RSO for one or more years. The "on-the-job" experiences afforded by internal audits, surveys, program management, NRC inspections, preparing licensing correspondence, evaluating authorized user qualifications/protocols/ facilities and the many, varied day-to-day challenges posed to an RSO in your type of licensed program cannot be accelerated or substituted for.

The support systems and administrative mechanisms proposed for Mr. Crawford involving Dr. Jurrison, Mr. Ashbrook and your consulting group still do not mitigate our concern.

The differences between a large Type A medical broad scope licensed program and nuclear reactor programs in the U.S. Navy/commercial nuclear power plant outweigh the relatively few similarities between the two.

We do not comprehend how many years of experience in nuclear Navy and commercial nuclear power serve to prepare an individual to manage a large Type A medical broad scope licensed program that also includes portable gauging devices, self-shielded irradiators, and many research users of a wide variety of radioactive materials in animal, in vitro, and human studies. **Please explain specifically how Mr. Crawford's nuclear Navy and commercial nuclear power plant work prepared him to work as RSO for this license.**

2. **Please confirm** that Mr. Crawford's duties and responsibilities as RSO will include all of the items described in Appendix E in NUREG 1556, Vol. 1, Rev. 1; Appendix H in NUREG 1556, Vol. 5; Appendix I in NUREG 1556, Vol 7; and Appendix I in NUREG 1556, Vol. 9.
3. **Please describe or list** the specific duties Mr. Crawford has already acquired experience in as an HP/Deputy RSO- in- training under your broad scope licensed program in the time frame from March 1, 2004, to March 4, 2005 (or later).
4. Your letter dated March 4, 2005, emphasizes that Mr. Crawford spent his time as Health Physicist/Deputy RSO - in- training from March 1, 2004, to March 4, 2005, primarily updating the Radiation Safety Manual, reviewing about 40 protocols for the IRB and attending meetings, training activities, completing developmental assignments, etc.

10 CFR 35.50(b)(1)(ii) requires, in part, that an individual fulfilling the responsibilities of the Radiation Safety Officer as provided in 10 CFR 35.24 to be an individual who has completed a structured educational program consisting of..

"*One year of full-time (emphasis added) radiation safety experience under the supervision of the individual identified as the Radiation Safety Officer on a Commission or Agreement State license or permit issued by a Commission master material licensee that authorizes similar type(s) of use(s) of byproduct material involving the following-*

- (A) Shipping, receiving, and performing related radiation surveys;
- (B) Using and performing checks for proper operation of instruments used to determine the activity of dosages, survey meters, and instruments used to measure radionuclides;
- (C) Securing and controlling byproduct material;
- (D) Using administrative controls to avoid mistakes in the administration of byproduct material;
- (E) Using procedures to prevent or minimize radioactive contamination and using proper decontamination procedures;
- (F) Using emergency procedures to control byproduct material; and
- (G) Disposing of byproduct material."

**Please explain** how Mr. Crawford completed one year of full-time radiation safety experience under the supervision of the individual identified as the Radiation Safety Officer on a Commission license that authorizes similar type(s) of use(s) of byproduct material involving the tasks listed above in 10 CFR 35.50(b)(1)(ii)(A) through (G), inclusive, while, at the same time, from March 1, 2004, to the date of your letter, March 4, 2005, he was updating the Radiation Safety Manual, reviewing about 40 protocols for the IRB and attending meetings, training activities, completing developmental assignments, etc.

Please note that the training an individual receives in the course of completing formal educational studies, such as college work, may not be counted as time spent acquiring work experience based upon the knowledge gained by the completion of said college work.

5. As an alternative to responding to the above items, please submit the name, qualifications, delegation of authority, 10 CFR 35.24(b) letter, and appropriate supporting documentation of a proposed RSO for this license. Please do not submit information that we must protect from public disclosure, per 10 CFR 2.390, such as social security numbers, dates of birth, resumes, curricula vitae, college transcripts, and so on.

In preparing your response, please also be reminded of the provisions in 10 CFR 30.9(a), "Completeness and accuracy of information,"...(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects."

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter will be available electronically in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. The enclosed license document is exempt from public disclosure in accordance with 10 CFR 2.390, because its disclosure to unauthorized individuals could present a security vulnerability.

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**ACTION REQUIRED**

Submit the requested information to my attention by referencing control number **313997** to facilitate proper handling . Upon receipt of your response we will resume our review. Address your written response to my attention at the above address.

**PLEASE DIRECT ANY QUESTIONS YOU MAY HAVE TO ME AT (630) 829-9841 or (800) 522-3025.**

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NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

Colleen Carol Casey

March 8, 2005

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