EXPIRES: (03/31/2012) NRC FORM 313 U.S. NUCLEAR REGULATORY COMMISSION APPROVED BY OMB: NO. 3150-0120 (1-2012)Estimated burden per response to comply with this mandatory collection request: 4.3 hours. Submittal of 10 CFR 30, 32, 33, the application is necessary to determine that the applicant is qualified and that adequate procedures exist 34, 35, 36, 39, and 40 to protect the public health and safety. Send comments regarding burden estimate to the Information Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by APPLICATION FOR MATERIALS LICENSE internet e-mail to infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 205C3. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW. APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH: IF YOU ARE LOCATED IN: OFFICE OF FEDERAL & STATE MATERIALS AND ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, ENVIRONMENTAL MANAGEMENT PROGRAMS DIVISION OF MATERIALS SAFETY AND STATE AGREEMENTS SEND APPLICATIONS TO: U.S NUCLEAR REGULATORY COMMISSION MATERIALS LICENSING BRANCH WASHINGTON, DC 20555-0001 U.S. NUCLEAR REGULATORY COMMISSION, REGION III 2443 WARRENVILLE ROAD, SUITE 210 ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS: LISLE, IL 60532-4352 IF YOU ARE LOCATED IN: ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHOLKANSAS, LOUISIANA, MISSISSIPPI, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, RORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAROTA, TEXAS, ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA. KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO: SEND APPLICATIONS TO: LICENSING ASSISTANCE TEAM NUCLEAR MATERIALS LICENSING BRANCH DIVISION OF NUCLEAR MATERIALS SAFETY U.S. NUCLEAR REGULATORY COMMISSION, REGION IV U.S. NUCLEAR REGULATORY COMMISSION, REGION I 1600 E. LAMAR BOULEVARD 475 ALLENDALE ROAD ARLINGTON, TX 76011-4511 KING OF PRUSSIA, PA 19406-1415 PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY HID THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S.NUCLEAR REGULATORY COMMISSION JURIS SECTIONS. 2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)
US Department of Commerce NOAA THIS IS AN APPLICATION FOR (Check appropriate item) A. NEW LICENSE National Ocean Service 219 Fort Johnson RD 39-19399-02 B. AMENDMENT TO LICENSE NUMBER C. RENEWAL OF LICENSE NUMBER Charleston SC 29412-9110 3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED 4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION US Department of Commerce NOAA John A. Bemiss National Ocean Service TELEPHONE NUMBER 219 Fort Johnson 2) 843 - 762 - 8521 Charleston Sc 29412-9110 SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE 5. RADIOACTIVE MATERIAL Element and mass number; b. chemical and/or physical form; and c. maiximum amount 6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED. which will be possessed at any one time INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR 8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS. TRAINING EXPERIENCE FACILITIES AND EQUIPMENT 10 RADIATION SAFETY PROGRAM 12. LICENSE FEES (See 10 CFR 170 and Section 170.31) 11 WASTE MANAGEMENT. AMOUNT FEE CATEGORY ENCLOSED \$ NA 13. CERTIFICATION. (Must be completed by applicant). THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS. APPLICATION ARE BINDING THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTANED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF. WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT 749 MAKES IT A C RIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE DATE Rso N Jann 1/2012 Dem

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UNITED STATES DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration NATIONAL OCEAN SERVICE

Center for Coastal Environmental Health and Biomolecular Research 219 Fort Johnson Road Charleston, South Carolina 29412-9110

March 14, 2012 Division of Nuclear Materials Safety U.S. Nuclear Regulatory Commission, Region I 475 Allendale Road King of Prussia, PA 19406-1415

Dear Sir:

I am requesting Dr. Natasha White be added to our license (93-19399-02) as a licensed user Section 11B. Dr. White completed a course conducted by Engelhardt and Associates Inc. Radiation Consultants given in April 20-22 2009 in Charleston SC. Please refer to the course syllabus attachment 1. Enclosed is a CV of Dr. White's past experience attachment 2. In addition Dr White has been working under the direct supervision of Dr. Pat Fair who is designated as a licensed user on our license for the past 2 years using H-3 and Cr-51 labeled compounds.

If further information is required please contact me at 843-762-8521 or email john.bemiss@noaa.gov

Sincerely

ohn A. Bemiss

Radiation Safety Officer

Day One	Description	Objectives
07:30 – 8:00 a.m.	Continental Breakfast	Not Applicable (NA)
08:00 - 08:10	Seminar Objectives/Overview	Explain seminar objectives and meet trainers.
08:10 - 08:30	 Radiation and Its Uses (Chapter 1) Ionizing radiation and radioactive decay Contemporary applications 	Relate the basic properties of ionizing radiation. List common applications of ionizing radiation in industry, research and medicine.
08:30 - 08:50	 Regulatory Agencies and Licensing (Chapter 2) Where regulatory standards come from NRC vs. Agreement States Other agencies (e.g., OSHA, FDA, EPA, DOT) 	Relate how the NRC regulations are developed. Define difference between Agreement vs. Non-Agreement states. Recognize how other agencies regulate radiation.
08:50 - 09:00	Break	NA
09:00 – 10:30	 Radiation Physics (Chapter 5) Atomic composition, structure, and terms Radioactive decay and half-life Properties of common decay products Radioactive decay modes and schemes Interactions with matter 	Relate the basic atomic structure and common terms. Define half-life and radioactive decay. Describe basic properties of alpha, beta, x-ray, & gamma. Recognize the basic radioactive decay modes and emission characteristics. Compare interaction mechanisms (directly vs. indirectly ionizing).
10:30 - 11:30	Group Sessions	See Performance Objectives for Group
11:30 – 12:30 p.m.	Lunch	NA
12:30 - 01:00	 Radiation Units (Chapter 6) Exposure units Dose and dose equivalent units Energy transfer (LET, QF) 	Identify the difference between exposure and dose. Relate the traditional and SI units for exposure (R C/kg), dose (rad, Gy), and dose equivalent (rem, Sv). Examine linear energy transfer and quality factors as these pertain to biological effectiveness.
01:00 - 01:20	Common Sources of Radiation (Chapter 6)Naturally occurringMedical	Relate typical levels of radiation from common sources.

Day One (continued)	Description	objectives
01:20 - 01:30	Break	NA
01:30 - 02:20	Regulatory Dose Limits and Radiation Dosimetry (Chapter 7) • Dose limits (public vs. occupational) • Types of dosimeters; how they work • Personnel monitoring requirements • Dosimetry reporting requirements	Identify the regulatory dose limits for radiation workers, the embryo/fetus of a declared pregnant woman, and members of the public. Explain types of personnel dosimeters and their limitations. Relate monitoring and reporting requirements.
02:20 - 02:30	Break	NA
02:30 - 03:00	 Radiation Biology (Chapter 9) Cellular, tissue, and systemic effects Delayed effects, early somatic effects Acute radiation syndrome Hormesis, threshold vs. non-threshold 	Describe the biological effects of radiation and the dose levels where these effects occur. Contrast perceived vs. real risk.
03:00 - 04:00	Group Sessions	See Performance Objectives for Group
Day Two	Description	Objectives
07:30 – 08:00 a.m.	Continental Breakfast	NA
08:00 – 09:40 (10 min. break)	 Radiation Detection and Measurement (Chapter 10) Types of equipment Appropriate uses Demonstration of equipment Self-reading dosimeters 	Describe how to select and operate equipment for the different types of radiation. Identify the basic design principles of various detectors.
09:40 - 09:50	Break	NA
09:50 – 10:40	 Radiation Protection (Chapter 11) ALARA Methods for protection Posting and labeling requirements 	Explain what ALARA is and how to implement. Describe methods used for radiation protection (e.g., time, distance, shielding, contamination control). Apply inverse square law. Recognize when and where to post signs and apply labels.

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Day Three	Description	Objectives
07:30 – 08:00 a.m.	Continental Breakfast	NA
08:00 - 08:40	Packaging, Transport, and Receipt of Radioactive Materials (Chapter 15) • Shipper's responsibilities • Transportation regulations (NRC, DOT, IATA) • Classification and packaging • Transport on public roads • Receipt of radioactive materials	Define shipper's responsibilities and regulations affecting radioactive materials transportation. Describe basic packaging, marking, and labeling provisions for limited and Type A quantities. Describe DOT provisions for employee training and transport on public roads. Relate procedures for safe receipt of packages.
08:40-08:50	Break	NA
08:50 - 09:40	 NRC Regulations (Chapter 2) Part 19, Notices, Instructions to Workers Part 20, Radiation Protection Standards Parts 30-35, license types and provisions Special requirements (gauges and licenses) 	Identify critical provisions of Part 19 and 20 worker information and protection standards. Identify NRC license and registration requirements (e.g., exempt, general, specific). Interpret basic provisions for specific license categories (e.g., manufacture, broad scope, radiography, medical use, irradiators).
09:40 - 09:50	Break	NA
09:50 – 10:30	 Regulatory Inspections (Chapter 17) How to prepare for NRC/state inspections How to deal with inspectors What to do if the inspection is going badly What to do if called for an enforcement conference Interactions with the public and media 	Relate the inspection process. Explain how to prepare for and respond to enforcement activities. Define the NRC's media notification criteria. Define key aspects of communicating with the public and media.
10:30 – 11:20	Group Sessions – Key aspects for writing a license New, renewal, & amendment applications Content, fees Reportable incident scenarios When to/not to report an incident Interactions with the public and media	Identify references available for assistance when writing a license (e.g., NRC Regulatory Guides). Identify key aspects (do's, don'ts) for writing a license. Discuss incident scenarios and Identify NRC requirements for reporting incidents and misadministrations (medical).
11:20 – 12:00	Group Sessions – Examination	Complete exam and score 85% or better.

Day Two (continued)	Description	Objectives
10:40 - 11:30	Group Sessions	See Performance Objectives for Group
11:30 – 12:30 p.m.	Lunch	NA
12:30 - 01:30	Radiation Incidents and Emergency Response (Chapter 13) Types (gauge, medical, academic) Procedures Source leakage, loss Emergency personnel as responders Performance based training Interactions with public, media, and employees	Define the RSO's role in planning for and preventing accidents. Examine key components of an emergency plan.
01:30 - 01:40	Break	NA
01:40 - 02:30	 Radiation Protection Programs (Chapter 3) Written programs Key elements (e.g., RSO/RSC, facility design, PPE, procedures, records, audits) Annual reviews 	Examine key elements of an effective radiation protection program. Assess record keeping requirements.
02:30 - 02:40	Break	NA
02:40 - 03:00	Responsibilities for Radiation Protection (Chapter 16) • Who is responsible • Legal issues	Relate various responsibilities for radiation protection and regulatory compliance.
03:00 - 04:00	Group Sessions	See Performance Objectives for Group

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NATASHA D. HENRY-WHITE, Ph.D.

219 Fort Johnson Rd., Charleston, SC 29412 Office: (843) 762-8530 Fax: (843) 762-8700

Email: Natasha.Henry@noaa.gov Alt. Email: mstasha93@yahoo.com

EDUCATION

Florida A&M University Florida A&M University Florida A&M University Environmental Science, Ph.D. Environmental Science, M.S. Biology, B.S.



PROFESSIONAL EXPERIENCE

2008- pres.

Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, Center for Coastal Environmental Health and Biomolecular Research Environmental Scientist

- Conduct toxicological research on health and risk assessment of bottlenose dolphins in Charleston, SC and Indian River, FL. Including various cytotoxicology and immunotoxicology assays.
- Conduct laboratory and field research in microbiology, environmental sciences and marine science related to Triclosan and other pharmaceutical contaminants and their effects on marine mammals.
- Maintain mammalian cell lines used for toxicological experiments.
 Cell lines include MCF-7 BOS human breast cells and bottlenose dolphin skin cells.
- Analyze and interpret data for publication in peer-reviewed journals.

2007-2008

Department of Commerce, NOAA, Office of Education, Educational Partnership Program, Graduate Science Program Biological Sciences Student Trainee

- Conduct laboratory research related to bioremediation studies and completed dissertation writing.
- Trained in basic toxicological research techniques including cell and tissue culture, aseptic techniques, and ELISA.

2002-2007

Florida A&M University, Environmental Sciences Institute Graduate Research Assistant

- Conduct supervised research, including field and laboratory research, related to bioremediation studies and general environmental sciences.
- Assist major professor with administrative duties and served as a teaching assistant in Introductory Environmental Sciences and Pollution Science courses and a mentor to undergraduate students through tutoring and instruction in laboratory techniques.

 Deliver lectures, develop and grade assignments and exams, and conduct study groups to prepare upper-level undergraduate students for coursework.

TEACHING EXPERIENCE

2010 - present Grantham University

Adjunct Instructor – Environmental Science

2009-2010 Axia College, University of Phoenix

Online Faculty - Environmental Science

2008-2011 Trident Technical College

Adjunct Instructor- Biological Sciences

PUBLICATIONS

Henry, N.D. and Fair, P. (**2011**). Comparison of *in vitro* cytotoxicity, estrogenicity, and antiestrogenicity of triclosan, perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Journal of Applied Toxicology. Accepted, In Press.

Henry. N.D., Robinson, L., Johnson, E., Cherrier, J., and Abazinge, M. **(2011)**. "Biodegradation of phenanthrene by *Acinetobacter calcoaceticus* supplemented with rhamnolipid biosurfactants." *Bioremediation Journal*. 15(2): 1-12.

Fair, P.A., Lee, H., Adams, J., Darling, C., Pacepavicius, G., Alaee, M., Bossart, G.D., <u>Henry, N.D.</u>, and Muir, D. (2009). "Detection of triclosan in plasma of wild Atlantic bottlenose dolphins (*Tursiops truncatus*) and in their environment". *Environmental Pollution*. 157(8-9): 2248-2254.

Henry, N.D. and Abazinge, M.D. (2009). "Optimization of a controlled release delivery system of microparticles containing biosurfactants for bioremediation of polycyclic aromatic hydrocarbons". Bioremediation Journal. 13(2): 79-91.

Henry, N.D. (2008). "Enhanced Bioremediation: An innovative strategy to increase microbial degradation of polycyclic aromatic hydrocarbons". Ph.D. Dissertation. Environmental Sciences Institute, Florida A&M University, Tallahassee, FL, USA.

Henry. N.D. and Abazinge, M.D. (**2007**) "*In vitro* analysis of enhanced phenanthrene emulsification and biodegradation using rhamnolipid biosurfactants and *Acinetobacter calcoaceticus.*" In E. Yanful (Ed.), *Appropriate Technologies for Environmental Protection in the Developing World.* pp. 317-323. Springer Netherlands.

Henry. N.D., Abazinge, M.D., Johnson, E. and Jackson, T. (2005). Morphology and Release Profiles of Biodegradable Microparticles Containing Rhamnolipid Biosurfactant. *Bioremediation Journal* 9(3-4):121-128.

PUBLICATIONS IN PREPARATION

P.A. Fair, H-C. Stavros, M.A.M. Mollenhauer, J.C. DeWitt, K. Kannan, G. Mitchum, G. Bossart, D.E. Keil, N.D. Henry, and M.M. Peden-Adams. Effects of DE-71 on immune function, clinical chemistry, and thyroid hormone levels in adult female B6C3F1 mice. Submitted to the Journal of Immunotoxicology.

P.A. Fair, M.A.M. Mollenhauer, N. D. Henry, L. Wills, G. Bossart, D.E. Keil, and M.M. Peden-Adams. Effects of an environmentally relevant PCB-mixture on immune function, clinical chemistry, and thyroid hormone levels in adult female B6C3F1 mice. In review for submission to the Journal of Immunotoxicology.

ABSTRACTS

Henry, N.D. and Fair, P.A. **(2012)**. Comparison of *in vitro* cytotoxicity, estrogenicity, and anti-estrogenicity of triclosan, perfluoctane sulfonate (PFOS), and perfluoroctanoic acid (PFOA). Society of Toxicology. San Francisco, CA.

Peden-Adams, M.M., Ayala, N., Young, S., Hinckley, K., Rueckert, J.A., Taylor, L., Chow, M., David, W., **Henry**, **N.**, Keil, D.E. **(2012)**. Evaluation of possible modes of action for PFOS-induced humoral immunosuppression. Society of Toxicology. San Francisdo, CA.

Wirth, J.R., Peden-Adams, M.M., **Henry**, **N.**, and Fair, P.A. **(2011)**. Comparison effect of *in vitro* PFOS exposure on bottlenose dolphin and murine immune function. Society of Toxicology. Washington, D.C.

N.D. Henry and P.A. Fair. *In vitro* cytotoxic and estrogenic potential of triclosan. **(2010)** Society of Environmental Toxicology and Chemistry (SETAC) North America. Portland, Oregon.

P.A. Fair, M.A.M. Mollenhauer, **N. Henry**, G. Bossart, L. Wills, D.E. Keil, and M.M. Peden-Adams. **(2010)** Effects of a complex mixture of PCBs on immune function in B6C3F1 mice. Society of Toxicology. Salt Lake City, Utah.

Henry, N.D. and Abazinge, M.D. **(2007)**. *In vitro* analysis of enhanced phenanthrene emulsification and biodegradation using rhamnolipid biosurfactants and *acinetobacter calcoaceticus*. *NOAA Educational Partnership Program 4th Education and Science Forum*. Tallahassee, Florida. Poster Presentation. **2**nd **Place Award**.

Henry, N.D. and Abazinge, M.D. **(2006).** Use of biodegradable microparticles containing rhamnolipid biosurfactant to emulsify oil in recreational boat marinas in Tampa Bay. *American Society of Limnology and Oceanography Ocean Sciences Meeting.* Honolulu, Hawaii. Poster Presentation.

Henry, N.D., Abazinge, M.D., Johnson, E., and Jackson, T. **(2005)**. *National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) 32nd Annual Conference.* Orlando, Florida. Poster Presentation.

Henry, N.D., Abazinge, M.D. **(2004)**. Morphology and Release Profiles of Biodegradable Microparticles Containing Rhamnolipid Biosurfactant. *National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE) 31st Annual Conference*. San Diego, California. Oral Presentation.

Henry, N.D., Abazinge, M.D., Johnson, E., and Jackson, T. **(2003)**. Morphology and Encapsulation Efficiency of Biodegradable Polymeric Microparticles containing Rhamnolipid Biosurfactant. *FAMU Student Research Forum*. Tallahassee, Florida. Poster Presentation.

Henry, N.D., Abazinge, M.D., Johnson, E., and Jackson, T. **(2002)**. Development of a Slow Release Delivery System of Microparticles containing Rhamnolipid Biosurfactant. *NOBCChE 29th Annual Conference*. New Orleans, Louisiana. Oral Presentation.

RESEARCH INTERESTS

- ♦ *In vitro* and *in* vivo examination of toxicology of emerging contaminants on marine mammal and murine models.
- Supression and enhancement of immune function as a result of contaminant exposure.
- Environmental fate and transport of emerging contaminants.
- ◆ Bioremediation of contaminants by microbes stimulated with exogenous substances.

FELLOWSHIPS AND AWARDS

2011	Beyond Ph.D Professional Development Program
2010	PAESMEM/AAAS Building Science, Engineering and Technology
	Leadership Workshop
2007-2008	NOAA Graduate Sciences Program Fellowship
2002-2007	Environmental Sciences Institute Fellowship, FAMU
2005-2007	Minorities Striving and Pursuing Higher Degrees of Success in Earth
	Science Systems (MSPHDS) Professional Development Program.
2002 & 2004	NOBCChE Travel Award
2000-2002	Graduate Assistantship, FAMU
1994-1997	Florida-Georgia Alliance for Minority Participation Scholarship

This is to acknowledge the rec	ceipt of your letter application dated	
includes an administrative revi	, and to inform you that the initial processing which iew has been performed. (39-19399-0) ve omissions. Your application was assigned to a note that the technical review may identify additional	
Please provide to this office within 30 days of your receipt of this card		
	n forwarded to our License Fee & Accounts Receivable separately if there is a fee issue involved.	
Your action has been assigne When calling to inquire about You may call us on (610) 337-	this action, please refer to this control number.	
NRC FORM 532 (RI) (6-96)	Sincerely, Licensing Assistance Team Leader	