

David Chandler

428 Sugarwood Dr.

937-546-2525

Knoxville, TN 37934

dchandler2523@gmail.com

OBJECTIVE

To obtain a nuclear engineering research and development position with a focus in nuclear reactor physics, where I can draw upon and enhance my research reactor and irradiation experiment design and analysis experience to support high-impact research and development involving advanced, research, and test reactors.

EDUCATION

Ph.D. Nuclear Engineering , University of Tennessee, Knoxville, TN Graduate Certificate, Nuclear Criticality Safety	3.91/4.00	August 2011
M.S. Nuclear Engineering , University of Cincinnati, Cincinnati, OH	3.96/4.00	August 2008
B.S. Mechanical Engineering , University of Cincinnati, Cincinnati, OH	3.80/4.00	June 2008

PROFESSIONAL EXPERIENCE

Oak Ridge National Laboratory, Oak Ridge, TN

Neutron Sciences Directorate, Research Reactors Division

Reactor Analysis and Modeling Team Lead

February 2019 – present

Nuclear Safety and Experiment Analyst

September 2011 – February 2019

Graduate Student Researcher

June 2008 – September 2011

Westinghouse Electric Company, LLC, Monroeville, PA

Core Engineering Cooperative Education Student

December 2005 – December 2007

Feintool, Blue Ash, OH

Maintenance Engineering Cooperative Education Student

December 2004 – August 2005

EXPERIENCE DESCRIPTIONS

Oak Ridge National Laboratory

September 2011 – present

- Perform nuclear safety basis assessments, experiment analysis, and research to support the Oak Ridge National Laboratory's High Flux Isotope Reactor (HFIR), which is a versatile 85 MW research reactor.
- Reactor Analysis and Modeling Team Lead.
 - Lead a team of technically diverse reactor analysts in support of operational and research missions.
 - Manage and mentor reactor analysis and modeling staff, including distribution of workload, annual performance expectations, and developmental and career growth goals.
 - Provide relevant input to assist the safety manager and team leads to support safe, reliable, and efficient operations as well as the division's milestones and scientific missions.
 - Work with the experiment analysis and coordination team and experimentalists to support programmatic missions, such as isotope production and materials irradiation.
 - Cross directorate collaboration and technical point of contact for reactor and experiment analysis.
- Reactor enhancement activities.
 - Support efforts to develop new or improve existing irradiation and neutron scattering capabilities.
 - Develop, solicit, and analyze enhancement recommendations and provide them to management.
 - Redesign permanent beryllium reflector for increased experiment versatility, plutonium-238 production, and thermal-structural performance.
 - Evaluate the impact of a heavy water reflector on safety (e.g., power distribution) and performance metrics (e.g., cycle length), with focus on beam tube brightness enhancement.
 - Assessment of fuel plate inlet spacing combs to provide additional end stiffening for deflection mitigation.

- Nuclear safety analysis activities.
 - Safety analyst for the reactor fuel elements, core components, and control plates/cylinders.
 - Perform reactor physics and thermal hydraulics design and safety assessments and calculations in accordance with safety basis procedures and the safety analysis report to support new component designs (e.g., control element poison concentration changes) and acceptance of nonconforming fuel elements and core components.
 - Develop and maintain tools and methods to evaluate the impact of fuel plate homogeneity/fuel distribution nonconformances on performance and reactor safety limits and limiting control settings.
 - Develop and maintain tools and methods to evaluate reactor startup source needs and projected startup curves to support testing.
 - Author of the safety basis procedure for determining the beginning-of-cycle estimated symmetrical critical control element position and perform, check, and review such calculations.
 - Develop and maintain tools and methods to estimate intra cycle and shutdown xenon and samarium worth curves for use in mid-cycle restart analyses.
 - Develop and maintain tools and methods to evaluate subcritical multiplication, activation, and dose rate mapping for pre-irradiated cores that have been exposed to neutron sources while loaded in the vessel.
 - Co-develop a reactor response simulator to couple to the wide range counting simulator to help troubleshoot and assess the impact tuning parameters have on reactor startup.
 - Perform safety evaluations through the Unreviewed Safety Question (USQ) process and to ensure technical compliance with 10CFR830 Subparts A and B, affecting reactor safety.
 - Nuclear safety member on the Emergency Response Team.
- Support the high-enriched uranium (HEU) to low-enriched uranium (LEU) fuel conversion project.
 - HFIR conversion team technical lead (2018-2020).
 - Collaborate and communicate with the Reactor Conversion, Fuel Fabrication, Fuel Qualification, and Cross-Cutting pillars and participate in annual United States High Performance Research Reactor Working Group meetings.
 - Work with project manager, team, and conversion pillars to define work scope and schedule.
 - Collaborate with end users and project team to define key performance metrics (e.g., ^{252}Cf production, cold neutron flux in cold source) to be conserved or enhanced post-conversion.
 - Generate enhanced LEU core designs, develop neutronic and thermal-hydraulic models, perform optimization studies, and compare results to those obtained with HEU fuel.
 - Perform safety basis depletion simulations, core performance studies (e.g., cycle length, neutron fluxes to experiment facilities, beam tube brightness), and safety metric assessments (e.g., fission rates and densities, temperature coefficients, differential and integral control element worth, kinetics data, high-fidelity heat deposition, decay heat, margin to burnout, margin to flow instability).
- Neutronics lead supporting the ^{238}Pu production project at ORNL/HFIR.
 - Perform target design and optimization studies, with emphasis on target yield and efficiency, and assess impact of target irradiation on reactor safety, performance, and missions.
 - Perform multi-cycle safety basis calculations (e.g., heat deposition, source terms, yield, impact on core performance) on various designs to qualify them for in-vessel irradiation.
 - Develop and maintain a new activation and heat deposition code that couples MCNP to ORIGEN that can make use of variance reduction techniques via ADVANTG.
 - Analyze fully loaded reflector production configurations and perform sensitivity studies on initial feed material loading and various cross-section libraries.
 - Support in-vessel irradiation safety basis, post-irradiation examination, criticality safety, transportation, and hot cell planning activities.
 - Collaborate with the Idaho National Laboratory/Advanced Test Reactor ^{238}Pu production project team.

- Code development and maintenance activities.
 - Co-developer and tester of HFIRCON, a HFIR-specific fuel and experiment analysis toolkit making use of MCNP/ORNL-TN, ADVANTG, ORIGEN, and LavaMint.
 - Develop and maintain reactor physics radiation transport and depletion models and methods.
 - Develop and maintain automation methods for steady-state heat transfer analyses.
 - Member of the software configuration control board, which verifies that the appropriate safety software quality assurance processes have been completed for any software used for nuclear safety calculations.
 - Generate and maintain software quality assurance plans, safety basis procedure forms, verification and validation plans, and entries for reactor physics safety basis codes.
 - Owner of division's safety basis neutronics computational cluster.
- Experiment analysis activities.
 - Prepare, check, and review design and safety basis calculations for in-vessel irradiation experiments (e.g., LEU foils for ^{99}Mo production, ^{75}Se production targets, Gd shielded fusion test specimen, mini-fuel-bearing targets, advanced control absorber material targets).
 - Characterize neutron and gamma fluxes/doses in the Neutron Activation Analysis (NAA) facilities to support the NAA scientists and users.
 - Develop and maintain Gamma Irradiation Facility (GIF) computational models and methods to supplement dose estimates for GIF engineers and users.
 - Engage with the PROSPECT Collaboration to support antineutrino experiments.
 - Collaborate with neutron scattering analysts to support neutron scattering missions.
- Laboratory Directed Research and Development (LDRD) project involvement.
 - Co-investigator of “HFIR: Sustaining and Enhancing Neutron Science (SENSe).”
 - Co-investigator of “Advanced Modeling and Simulation to Support High Performance Research Reactor Conversions to Low Enriched Uranium.”
 - Co-investigator of “Transformational Capability for Integrated Analysis of HFIR Irradiation Experiments Using High-Performance Computing and High-Fidelity Modeling and Simulation.”
 - Provide HFIR neutronics support to “Transformational Fabrication Technologies for Nuclear Applications: Demonstration of Hybrid Structures for HFIR Control Plates.”
- Mentor to interns, graduate students, and new hires performing HFIR-related reactor physics-based research.
 - Andrew Conant, Georgia Institute of Technology: core modeling and simulation efforts for PROSPECT neutrino experiment. Ph.D. Committee Member, July 2019.
 - Joey Burns, Georgia Institute of Technology: neutronics design and optimization studies of additively manufactured control elements. Ph.D. Committee Member, November 2017.
 - C. J. Hurt, University of Tennessee: ^{99}Mo production studies, ^{238}Pu production target multi-physics analyses, and deterministic methods in COMSOL. Ph.D. Committee Member, December 2016.
 - Max Chaiken, Ohio State University: NpO_2 irradiations for enhanced ^{238}Pu production studies.
 - David Bravo, Virginia Polytechnic Institute: ^{51}Cr production studies for sterile neutrino experiments.
- Provide HFIR tours to visitors, employees, and student interns to educate them about the history and scientific missions of HFIR as well as the benefits of neutron science and nuclear power.
- Executive committee member for ONRAMP – Oak Ridge National Laboratory Nuclear Resources Analysis & Modeling Portfolio.
- Reviewer of American Nuclear Society transactions and journal articles.

Graduate Researcher at Oak Ridge National Laboratory

June 2008 – September 2011

- Perform reactor physics neutron transport, depletion, and kinetics research at HFIR.
- Conduct validation studies to create and qualify methods with state-of-the-art computational tools.
- Develop and validate a MCNP model with critical experiment power distribution and k_{eff} data.

- Develop and validate an ALEPH/MCNP reactor model and an analogous VESTA/MCNP model against post-irradiation uranium isotopic mass spectrographic data for three unique full power cycles.
- Create a SCALE/TRITON reactor model to calculate the buildup and reactivity worth of ^3He and ^6Li in the beryllium reflector and determine the end-of-life reflector nuclide inventory for transuranic and hazard categorization for transportation and storage purposes.
- Validate the SCALE model with post-discharge ^{252}Cf production target nuclide inventory measurements.
- Develop a spatially dependent reactor kinetics method with COMSOL Multiphysics via three-group neutron diffusion theory and nuclear data derived from a newly created SCALE/NEWT reactor model.
- Perform COMSOL-based finite element analysis research to study the spatially dependent neutron flux and power at steady state and during reactivity induced transients, such as control cylinder ejection accidents and hydraulic tube rabbit ejection experiments.
- Develop MATLAB and PARET based reactor point kinetics models to study reactivity events.

Core Engineer Co-op at Westinghouse Electric Company, LLC

December 2005 – December 2007

- Support the Core Engineering Department by performing and documenting Nuclear Design Report, Reload Safety Analysis Checklist, and INCORE calculations on Westinghouse pressurized water reactors.
- Complete Nuclear Design Report qualifications and partially completed Fuel Management and Reload Safety Analysis Checklist qualifications.
- Complete a subset of a fuel management study that included designing and optimizing three consecutive cycles' core loading patterns and executing appropriate safety and operational calculations on them.
- Complete the Pennsylvania State University Design Project by developing four scenario-specific loading patterns given a defined fuel inventory and evaluating safety and operational calculations on them.
- Analyze the average ^{10}B distribution on feed fuel rods.

Maintenance Engineer Co-op at Feintool

December 2004 – August 2005

- Maintained and enhanced removal arms, tumblers, oilers, and other auxiliary press equipment.
- Designed and constructed conveyors, carts, and other fineblanking-related tools and equipment.

COMPUTING SKILLS

Operating Systems:	Windows, Linux, Unix, MAC
Nuclear Codes:	MCNP, Visual Editor, SCALE, ADVANTG, HFIRCON, VESTA, Shift (limited), ALEPH, FISPACT, PARET, Westinghouse-specific codes (Advanced Nodal Code), HFIR Steady-State Heat Transfer Code, RELAP (limited)
Programming Languages:	MATLAB, FORTRAN, Python, C++ (limited), Simulink
CAD Packages:	Limited experience with NX5, SolidEdge, and AutoCAD
Finite Element/Volume:	COMSOL Multiphysics, FLUENT (limited)
Statistical Programs:	JMP, R, SAS
Other Software:	Microsoft Office, Mathematica, VisIt, Putty, NoMachine, HDFView

PROFESSIONAL CREDENTIALS and MEMBERSHIPS

- Member of the American Nuclear Society (ANS), 2004 – present.
 - Reactor physics member and ANS meeting session chair activities
- Executive Committee Member of the Oak Ridge/Knoxville Section of the ANS, 2012 – 2016.
- ORNL Management Boot Camp.
- Unreviewed Safety Question Determination (USQD) qualified.

- Radiological Worker I and II qualified - ORNL Specific.
- Human Performance and Nuclear Safety Culture training.
- Fundamentals of Engineering, National Council of Examiners for Engineering and Surveying, 2008.

AWARDS

- UT-Battelle Award for Mission Support, 2019.
- UT-Battelle Award for Engineering Research and Development, 2013.
- Several conference papers selected for journal paper publications.
- Best Paper Award, COMSOL Conference 2011, Boston, MA.
- University of Tennessee Graduate Research Assistant.
- Graduated Magna Cum Laude (University of Cincinnati, B.S. M.E.).
- Recipient of the Department of Energy, Clair Hulley, and Harold N. and Jean L. Herman Foundation Scholarships (University of Cincinnati).
- Outstanding Accelerated German Undergraduate (University of Cincinnati).
- National Soccer Coaches Association of America Scholar All American (West Carrollton High School).

CURRENT VOLUNTEER ACTIVITIES

- Youth soccer coach through Carroll Sports Academies (3-6-year-old boys and girls), 2020-present.
- Youth soccer assistant coach through FC National (8-11-year-old boys), 2021.

REFERENCES

- Available upon request.

PUBLICATIONS and CALCULATIONS

Doctoral Dissertation

D. Chandler, "Spatially-Dependent Reactor Kinetics and Supporting Physics Validation Studies at the High Flux Isotope Reactor," PhD diss., University of Tennessee, August 2011. (https://trace.tennessee.edu/utk_graddiss/1066)

Book Chapters

D. Chandler and C. D. Bryan, "High Flux Isotope Reactor (HFIR)," *Encyclopedia of Nuclear Energy*, Section in Chapter 9. Research Reactors, Elsevier, July 2021.

Journal Articles

J. R. Burns, D. Chandler, B. Petrovic, K. A. Terrani, "Design Optimization of Additively Manufactured Control Elements for the High Flux Isotope Reactor," *Nuclear Technology*, Expected 2021.

B. R. Betzler, D. Chandler, T. M. Evans, G. G. Davidson, C. R. Daily, S. C. Wilson, and S. W. Mosher, "As-built Simulation of the High Flux Isotope Reactor Core," *Journal of Nuclear Engineering*, **2021**, 2, pp. 28-34, February 2021. (doi.org/10.3390/jne2010003)

D. Chandler, B. R. Betzler, E. E. Davidson, and G. Ilas, "Modeling and Simulation of a High Flux Isotope Reactor Representative Core Model for Updated Performance and Safety Basis Assessments," *Nuclear Engineering and Design*, Vol. **366**, 110752, September 2020. (doi.org/10.1016/j.nucengdes.2020.110752)

- B. R. Betzler, D. Chandler, D. H. Cook, E. E. Davidson (née Sunny), and G. Ilas, “Design Optimization Methods for High-Performance Research Reactor Core Design,” *Nuclear Engineering and Design*, Vol. **352**, 110167, October 2019. (doi.org/10.1016/j.nucengdes.2019.110167)
- D. Chandler, B. R. Betzler, D. H. Cook, G. Ilas, and D. Renfro, “Neutronic and thermal-hydraulic feasibility studies for High Flux Isotope Reactor conversion to low-enriched uranium silicide dispersion fuel,” *Annals of Nuclear Energy*, Vol. **130**, pp. 277-292, August 2019. (doi.org/10.1016/j.anucene.2019.02.037)
- E. E. Davidson (née Sunny), B. R. Betzler, D. Chandler, and G. Ilas, “Heat Deposition Analysis for the High Flux Isotope Reactor’s HEU and LEU Core Models,” *Nuclear Engineering and Design*, Vol. **322**, pp. 563–576, October 2017. (doi.org/10.1016/j.nucengdes.2017.06.040)
- B. R. Betzler, D. Chandler, E. E. Davidson (née Sunny), and G. Ilas, “High-Fidelity Modeling and Simulation for a High Flux Isotope Reactor Low-Enriched Uranium Core Design,” *Nuclear Science and Engineering*, Vol. **187(1)**, pp. 81–99, July 2017. (doi.org/10.1080/00295639.2017.1292090)
- J. R. Burns, B. Petrovic, D. Chandler, and K. Terrani, “Reactor physics phenomena in additively manufactured control elements for the High Flux Isotope Reactor,” *Annals of Nuclear Energy*, Vol. **115**, pp. 403-414, May 2017. (doi.org/10.1016/j.anucene.2018.02.003)
- D. Chandler, R. T. Primm, III, G. I. Maldonado, and L. D. Proctor, “Nuclear Transmutations in HFIR’s Beryllium Reflector and Their Impact on Reactor Operation and Reflector Disposal,” *Nuclear Technology*, Vol. **177(3)**, pp. 395-412, March 2012. (doi.org/10.13182/NT12-A13483)
- D. Chandler, R. T. Primm, III, G. I. Maldonado, and J. D. Freels, “Neutronics Modeling of the High Flux Isotope Reactor using COMSOL,” *Annals of Nuclear Energy*, Vol. **38(11)**, pp. 2594-2605, November 2011. (doi: 10.1016/j.anucene.2011.06.002)
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Validation of a Monte Carlo Based Depletion Methodology via High Flux Isotope Reactor HEU Post-Irradiation Examination Measurements,” *Nuclear Engineering and Design*, Vol. **240(5)**, pp. 1033-1042, May 2010. (doi.org/10.1016/j.nucengdes.2010.01.007)
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Power Distribution Analysis for the High Flux Isotope Reactor Critical Experiment 3,” *Nuclear Science and Engineering*, Vol. **164(1)**, pp. 53-68, January 2010. (doi.org/10.13182/NSE09-03)

Technical Memorandum

- B. R. Betzler, D. Chandler, J. W. Bae, E. E. Davidson, G. Ilas, and J. L. Meszaros, “High Flux Isotope Reactor Low Enriched Uranium U-10Mo Fuel Design Parameters,” ORNL/TM-2021/XXX, Oak Ridge National Laboratory, Expected 2021. (in-review)
- D. Chandler, “Evaluation of High Flux Isotope Reactor Pseudo Overloaded Inner Fuel Plates,” ORNL/TM-2020/1825, Oak Ridge National Laboratory, Expected 2021. (in-review)
- D. Chandler and C. J. Hurt, “As-Built Neutronic and Thermal Hydraulic Simulations of HFIR Outer Fuel Element O-475,” ORNL/TM-2020/1809, Oak Ridge National Laboratory, Expected 2021. (in-review)
- B. R. Betzler, D. Chandler, J. W. Bae, G. Ilas, and J. L. Meszaros, “High Flux Isotope Reactor Low Enriched Uranium Low Density Silicide Fuel Design Parameters,” ORNL/TM-2020/1798, Oak Ridge National Laboratory, March 2021.
- J. W. Bae, B. R. Betzler, D. Chandler, G. Ilas, and J. L. Meszaros, “High Flux Isotope Reactor Low Enriched Uranium High Density Silicide Fuel Design Parameters,” ORNL/TM-2020/1799, Oak Ridge National Laboratory, March 2021.

S. C. Wilson, S. M. Mosher, C. R. Daily, and D. Chandler, “HFIRCON Version 1.0.5 User Guide,” ORNL/TM-2020/1742, Oak Ridge National Laboratory, October 2020.

C. D. Carathers, et. al., “Oak Ridge National Laboratory HFIR OFE-488 Fuel Element Failure Causal Theory Evaluation Interim Report,” ORNL/TM-2019/1120, Oak Ridge National Laboratory, February 2019.

B. R. Betzler, D. Chandler, A. J. Conant, C. R. Daily, E. E. Davidson, G. G. Davidson, T. M. Evans, G. Ilas, S. W. Mosher, and S. C. Wilson, “Reactor Physics Modeling of the Cycle 483 Event in the High Flux Isotope Reactor,” ORNL/TM-2018/1102, Oak Ridge National Laboratory, February 2019.

G. Ilas, B. R. Betzler, D. Chandler, E. E. Davidson, D. G. Renfro, “Key Metrics for HFIR HEU and LEU Models,” ORNL/TM-2016/581, Oak Ridge National Laboratory, October 2016.

D. Chandler, B. Betzler, G. Hirtz, G. Ilas, and E. Sunny, “Modeling and Depletion Simulations for a High Flux Isotope Reactor Cycle with a Representative Experiment Loading,” ORNL/TM-2016/23, Oak Ridge National Laboratory, September 2016.

A. Bergeron, D. Jaluvka, E. Wilson, D.G. Renfro, D. Cook, G. Ilas, D. Chandler, T. Muth, D. Pinkston, J. Wight, C. Lavender, R. Rabin, M. Cercy, “Reactor Conversion Program Discussion of HFIR LEU Conversion Design Options and Uncertainty Factors,” ANL/RTR/TM-15/11, Argonne National Laboratory, November 2015.

G. Ilas, D. Chandler, B. Ade, E. Sunny, B. Betzler, and D. Pinkston, “Modeling and Simulations for the High Flux Isotope Reactor Cycle 400,” ORNL/TM-2015/36, Oak Ridge National Laboratory, March 2015.

D. G. Renfro, D. Chandler, D. H. Cook, G. Ilas, P. K. Jain, and J. R. Valentine, “Preliminary Evaluation of Alternate Designs for HFIR Low-Enriched Uranium Fuel,” ORNL/TM-2014/154, Oak Ridge National Laboratory, October 2014.

D. Chandler, “Impact of the High Flux Isotope Reactor HEU to LEU Fuel Conversion on Cold Source Nuclear Heat Generation Rates,” ORNL/TM-2014/012, Oak Ridge National Laboratory, March 2014.

D. G. Renfro, et. al., “Low-Enriched Uranium Fuel Conversion Activities for the High Flux Isotope Reactor, Annual Report for FY2011,” ORNL/TM-2011/507, Oak Ridge National Laboratory, March 2012.

R. T. Primm, III, et. al., “Design Study for a Low-Enriched Uranium Core for the High Flux Isotope Reactor, Annual Report for FY 2009,” ORNL/TM-2009/313, Oak Ridge National Laboratory, February 2010.

D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Reactivity Accountability Attributed to Beryllium Reflector Poisons in the High Flux Isotope Reactor,” ORNL/TM-2009/188, Oak Ridge National Laboratory, December 2009.

D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Validation of a Monte Carlo Based Depletion Methodology with HFIR Post-Irradiation Examination Data,” ORNL/TM-2009/123, Oak Ridge National Laboratory, July 2009.

R. T. Primm, III, et. al., “Design Study for a Low-Enriched Uranium Core for the High Flux Isotope Reactor, Annual Report for FY 2008,” ORNL/TM-2009/87, Oak Ridge National Laboratory, March 2009.

D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Validating MCNP for LEU Fuel Design via Power Distribution Comparisons,” ORNL/TM-2008/126, Oak Ridge National Laboratory, November 2008.

Letter Reports

D. Chandler, D. G. Renfro, D. H. Cook, G. Ilas, and P. K. Jain, “Conceptual Design Parameters for HFIR LEU U-Mo Fuel Conversion Experiment Irradiations,” ORNL/LTR-2013/132, Oak Ridge National Laboratory, March 2013.

Full Length Conference Proceedings

D. Chandler, B. R. Betzler, J. W. Bae, D. H. Cook, and G. Ilas “Conceptual Fuel Element Design Candidates for Conversion of High Flux Isotope Reactor with Low-Enriched Uranium Silicide Dispersion Fuel,” PHYSOR 2020: Transition to a Scalable Nuclear Future, paper 1673, Cambridge, United Kingdom, March-April 2020.

D. Chandler, B. R. Betzler, and D. H. Cook “Reactor Improvement Options to Sustain High Flux Isotope Reactor Leadership into the Future,” PHYSOR 2020: Transition to a Scalable Nuclear Future, paper 1665, Cambridge, United Kingdom, March-April 2020.

B. R. Betzler, D. Chandler, T. M. Evans, G. G. Davidson, C. R. Daily, S. C. Wilson, and S. W. Mosher, “As-built Simulation of the High Flux Isotope Reactor Core,” PHYSOR 2020: Transition to a Scalable Nuclear Future, paper 1668, Cambridge, United Kingdom, March-April 2020.

J. W. Bae, B. R. Betzler, D. Chandler, and G. Ilas “Automated Fuel Design Optimization for High Flux Isotope Reactor Low-Enriched Uranium Core Design,” PHYSOR 2020: Transition to a Scalable Nuclear Future, paper 1564, Cambridge, United Kingdom, March-April 2020.

I. Variansyah, B. R. Betzler, D. Chandler, G. Ilas, and W. R. Martin, “A Metaheuristic Optimization Tool for High Flux Isotope Reactor Low-Enriched Uranium Design,” M&C 2019 International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering, Portland, OR, August 2019.

D. Chandler, B. R. Betzler, D. H. Cook, G. Ilas, and D. G. Renfro, “Neutronic and Thermal-Hydraulic Feasibility Studies for High Flux Isotope Reactor Conversion to Low-Enriched Uranium U_3Si_2 -Al Fuel,” PHYSOR 2018: Reactor Physics paving the way towards more efficient systems, Cancun, Mexico, April 2018.

B. R. Betzler, D. Chandler, D. H. Cook, E. E. Davidson (nee Sunny), and G. Ilas, “High Flux Isotope Reactor Low-Enriched Uranium Core Design Optimization Studies,” PHYSOR 2018: Reactor Physics paving the way towards more efficient systems, Cancun, Mexico, April 2018.

D. Chandler and R. J. Ellis, “Development of an Efficient Approach to Perform Neutronics Simulations for Plutonium-238 Production,” PHYSOR 2016 – Unifying Theory and Experiments in the 21st Century, Vol. 2, pp. 913–927, Sun Valley, Idaho, May 1-5, 2016.

G. Ilas, B. R. Betzler, D. Chandler, and E. E. Sunny, “High Flux Isotope Reactor Core Analysis – Challenges and Recent Enhancements in Modeling and Simulation,” PHYSOR 2016: Unifying Theory and Experiments in the 21st Century, Vol. 6, pp. 3547 – 3560, Sun Valley, Idaho, May 2016.

E. E. Sunny, B. R. Betzler, G. Ilas, and D. Chandler, “High-Fidelity Heat Deposition Analysis for the High Flux Isotope Reactor,” PHYSOR 2016: Unifying Theory and Experiments in the 21st Century, Vol. 6, pp. 1969 – 1983, Sun Valley, Idaho, May 2016.

R. M. Wham, L. K. Felker, E. D. Collins, D. E. Benker, R. S. Owens, R. W. Hobbs, D. Chandler, and R. J. Vedder, “Reestablishing the Supply of Plutonium-238,” The American Institute of Aeronautics and Astronautics Propulsion Energy Conference (AIAA 2015), Orlando, FL, July 27-29, 2015.

B. R. Betzler, B. J. Ade, D. Chandler, G. Ilas, and E. E. Sunny, “Optimization of Depletion Modeling and Simulation for the High Flux Isotope Reactor,” ANS MC2015 - Joint International Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method, Nashville, TN, April 19-23, 2015.

D. Chandler and R. J. Ellis, “Neutronics Simulations of ^{237}Np Targets to Support Safety-Basis and ^{238}Pu Production Assessment Efforts at the High Flux Isotope Reactor,” Nuclear and Emerging Technologies for Space (NETS) 2015, Albuquerque, NM, February 23-26, 2015.

C. J. Hurt, J. D. Freels, F. P. Griffin, D. Chandler, R. W. Hobbs, and R. M. Wham, “Safety Analysis Models for the Irradiation of ^{237}Np Targets at HFIR,” Nuclear and Emerging Technologies for Space (NETS) 2015, Albuquerque, NM, February 23-26, 2015.

C. R. Daily and D. Chandler, “Development and Testing of Nuclear Data Libraries for Improved Energy Deposition Modeling,” ANS RPSD 2014 – 18th Topical Meeting of the Radiation Protection & Shielding Division of the American Nuclear Society, Knoxville, TN, September 14-18, 2014.

C. J. Hurt, R. M. Wham, R. W. Hobbs, R. S. Owens, D. Chandler, J. D. Freels, G. I. Maldonado, “Plutonium-238 Production Target Design Studies,” Institute of Nuclear Materials Management 55th Annual Meeting, Atlanta, GA, July 20-24, 2014.

R. M. Wham, L. K. Felker, E. D. Collins, D. Benker, R. S. Owens, R. W. Hobbs, D. Chandler, R. J. Vedder, “The Plutonium-238 Project,” The 19th Pacific Basin Nuclear Conference (PBNC 2014), Vancouver, British Columbia, Canada, August 2014.

D. Chandler, J. D. Freels, G. I. Maldonado, and R. T. Primm, III, “COMSOL-based Nuclear Reactor Kinetics Studies at the HFIR,” COMSOL Conference 2011, Boston, MA, October 2011. (Best Paper Award)

D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Startup Reactivity Accountability Attributed to Isotopic Transmutations in the Irradiated Beryllium Reflector of the High Flux Isotope Reactor,” PHYSOR 2010, ANS Topical Meeting on Advances in Reactor Physics to Power the Nuclear Renaissance, Pittsburgh, PA, May 2010.

D. Chandler and R. T. Primm, III, “Selected Studies of Past Operations at the ORNL High Flux Isotope Reactor,” PHYSOR 2010, ANS Topical Meeting on Advances in Reactor Physics to Power the Nuclear Renaissance, Pittsburgh, PA, May 2010.

D. Chandler and R. T. Primm, III, “Recent Studies Related to Past Operations at the High Flux Isotope Reactor,” RERTR 09: 31st International Meeting on Reduced Enrichment for Research and Test Reactors, Beijing, China, November 2009.

D. Chandler and R. T. Primm, III, “Studies of Past Operations at the High Flux Isotope Reactor,” IGORR-12: 12th International Group on Research Reactors Meeting, Beijing, China, October 2009.

D. Chandler and R. T. Primm, III, “Preparing the High Flux Isotope Reactor for Conversion to Low Enriched Uranium Fuel – Extending Cycle Burnup,” ANS Topical Meeting ANFM 2009, Advances in Nuclear Fuel Management IV, Hilton Head Island, SC, April 2009.

Extended Abstract Conference Proceedings

D. Chandler, B. R. Betzler, J. W. Bae, and J. L. Meszaros, “Core Design Automation, Optimization, and Performance Characterization Methods for HFIR LEU Conversion,” RERTR 2021 – 41st International Meeting on Reduced Enrichment for Research and Test Reactors,” Virtual Meeting, April 2021.

D. Chandler, J. L. Meszaros, B. R. Betzler, et al., “Fuel Conversion Efforts at the High Flux Isotope Reactor – a 2020 Status Update,” ANS 2020 Winter Meeting and Technology Expo, Chicago, IL, November 2020.

J. W. Bae, B. R. Betzler, D. Chandler, G. Ilas, and J. L. Meszaros, “Neutronic and Thermal-Hydraulic Design Studies for High Flux Isotope Reactor Conversion to Low-Enriched Uranium High Density Silicide Dispersion Fuel,” ANS 2020 Winter Meeting and Technology Expo, Chicago, November 2020.

K. Godsey, C. Daily, and D. Chandler, “Beam Tube Brightness Evaluation of Low-Density $\text{U}_3\text{Si}_2\text{-Al}$ Design for High Flux Isotope Reactor LEU Conversion,” ANS 2020 Winter Meeting and Technology Expo, Chicago, IL, November 2020.

S. Van den Berghe, J. Wight, C. Landers, and D. Chandler, “BR2 LEU Conversion with High Density Silicide Fuel,” International Conference on Nuclear Security: Sustaining and Strengthening Efforts, Vienna, Austria, February 2020.

D. Chandler, et. al., “High Flux Isotope Reactor Conversion from High-Enriched to Low-Enriched Uranium Fuel – a 2019 Progress Update,” RERTR 2019 – 40th International Meeting on Reduced Enrichment for Research and Test Reactors,” Zagreb, Croatia, October 2019.

A. Bergeron, C. Bojanowski, J. Licht, K. Shehu, C. Reiter, F. Thomas, Y. Calzavara, P. K. Jain, D. Chandler, “Involute Working Group – Progress towards Validation of CFD for Involute-Plate Reactors Safety Analysis,” RERTR 2019 – 40th International Meeting on Reduced Enrichment for Research and Test Reactors,” Zagreb, Croatia, October 2019.

J. R. Burns, C. M. Petrie, and D. Chandler, “Burnup Calculation Methodology for a Small-Scale Fuel Irradiation Experiment in the High Flux Isotope Reactor (HFIR),” Transaction American Nuclear Society, Vol. **120**, pp. 841 - 844, 2019 ANS Annual Meeting, Minneapolis, MN, June 2019.

D. Chandler, M. W. Crowell, and K. E. Royston, “Increased Plutonium-238 Production via High Flux Isotope Reactor Permanent Beryllium Reflector Redesign,” Nuclear and Emerging Technologies for Space (NETS) 2019, Richland, WA, February 2019.

D. Chandler, B. R. Betzler, G. Ilas, D. H. Cook, and D. G. Renfro, “High Flux Isotope Reactor Low-Enriched Uranium Core Designs and Challenges,” Advances in Nuclear Nonproliferation Technology and Policy Conference (ANTPC) 2018, pp. 1 - 4, Orlando, FL, November 2018.

B. R. Betzler, D. Chandler, E. E. Davidson (née Sunny), and G. Ilas, “Optimized Design Performance Analysis Tools for a High Flux Isotope Reactor Low-Enriched Uranium Core,” Transaction American Nuclear Society, Vol. **119**, pp. 1275 - 1278, ANS 2018 Winter Meeting & Expo, Orlando, FL, November 2018.

J. R. Burns, D. Chandler, and B. Petrovic, “Design Optimization of Additively Manufactured HFIR Control Elements,” Transaction American Nuclear Society, Vol. **118**, pp. 855-858, 2018 ANS Annual Meeting, Philadelphia, PA, June 2018.

J. R. Burns, D. Chandler, B. Petrovic, and K. A. Terrani, “Depletion and Lifetime Performance Analysis of Advanced Manufactured Control Elements in the High Flux Isotope Reactor (HFIR),” Proceedings of the 2018 International Congress on Advances in Nuclear Power Plants, ICAPP 2018, pp. 738-745, Charlotte, NC, April 2018.

B. R. Betzler, D. Chandler, E. E. Davidson (née Sunny), and G. Ilas, “Design Optimization Studies for a High Flux Isotope Reactor Low-Enriched Uranium Core,” Transaction American Nuclear Society, Vol. **117**, 1266 – 1268, ANS 2017 Winter Meeting & Expo, Washington, DC, November 2017.

J. R. Burns, D. Chandler, B. Petrovic, K. A. Terrani, “Depletion Analysis of Additively Manufactured Control Elements in HFIR,” Transaction American Nuclear Society, Vol. **115**, 1180 – 1183, ANS 2016 Winter Meeting & Expo, Las Vegas, NV, November 2016.

K. Terrani, J. Kiggans, N. Sridharan, M. Gussev, M. Norfolk, J. Burns, D. Chandler, S. Babu, C. Bryan, D. Pinkston, “Additive Manufacturing of Research Reactor Control Elements and Subsequent Neutron Irradiation,” Transaction American Nuclear Society, Vol. **114**, 1229 – 1230, ANS 2016 Annual Meeting - Embedded Topical: Nuclear Fuels and Structural Materials 2016, New Orleans, LA, June 2016.

J. R. Burns, D. Chandler, B. Petrovic, and K. A. Terrani, “A Comparison of Modeling Strategies for Additively Manufacture HFIR Control Elements,” Transaction American Nuclear Society, Vol. **114**, 809 – 813, ANS 2016 Annual Meeting, New Orleans, LA, June 2016.

- J. R. Burns, D. Chandler, B. Petrovic, and K. A. Terrani, “Neutronic Modeling of Additively Manufactured HFIR Control Plates,” *Transaction American Nuclear Society*, Vol. **113**, 1057 – 1060, ANS 2015 Winter Meeting, Washington, DC, November 2015.
- R. W. Hobbs, D. Chandler, C. J. Hurt, J. D. Freels, R. S. Owens, and C. D. Bryan, “Potential Improvements to ^{238}Pu Production Targets for the High Flux Isotope Reactor,” *Transaction American Nuclear Society*, Vol. **113**, 207 – 210, ANS 2015 Winter Meeting, Washington, DC, November 2015.
- J. M. Risner and D. Chandler, “Application of ADVANTG with MCNP to Provide Reduced Uncertainties in Isotope Production Rates,” *ARIA 2015 – Workshop on Accelerator Radiation Induced Activation*, Knoxville, TN, April 15-17, 2015.
- D. Chandler, “Neutronics Simulations of ^{237}Np Targets to Support Safety-Basis and ^{238}Pu Production Assessment Efforts at the High Flux Isotope Reactor,” *Nuclear and Emerging Technologies for Space (NETS) 2015*, Albuquerque, NM, February 2015.
- R. M. Wham, et. al., “Plutonium-238 Production Target Design Studies,” *Institute of Nuclear Materials Management 55th Annual Meeting*, Atlanta, GA, July 20-24, 2014.
- D. Chandler and R. W. Hobbs, “Neutronics Analyses of NpO_2 Single Pellet Irradiations at HFIR to Support the Pu-238 Production Project,” *Transaction American Nuclear Society*, Vol. **108**, 753 – 755, ANS 2013 Annual Meeting, Atlanta, GA, June 2013.
- C. Bryan, D. Chandler, S. R. Sherman, C. J. Hurt, and R. D. Hunley, “LEU Foil Target Qualification and Hot Cell Preparations Supporting Dissolution Testing at ORNL,” *Mo-99 Topical Meeting*, Chicago, IL, April 2-4, 2013.
- D. Chandler, R. T. Primm, III, G. I. Maldonado, and R. W. Hobbs, “Black Rabbit Ejection Studies and COMSOL Kinetics Modeling Development at HFIR,” *Transaction American Nuclear Society*, Vol. **104**, 845 – 847, ANS 2011 Annual Meeting, Hollywood, FL, June 2011.
- O. Lastres, D. Chandler, J. J. Jarrell, and G. I. Maldonado, “Studies of Plutonium-238 Production at the High Flux Isotope Reactor,” *Transaction American Nuclear Society*, Vol. **104**, 716 – 718, ANS 2011 Annual Meeting, Hollywood, FL, June 2011.
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Burnup and Spatially-Dependent Uranium Isotopic Calculations for the High Flux Isotope Reactor,” *Transaction American Nuclear Society*, Vol. **103**, 768 – 769, ANS 2010 Winter Meeting, Las Vegas, NV, November 2010.
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Classification Calculations for the ORNL HFIR’s Beryllium Reflector Number 3,” *Transaction American Nuclear Society*, Vol. **103**, 676 – 678, ANS 2010 Winter Meeting, Las Vegas, NV, November 2010.
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “HFIR Post-Irradiation Curium Target Rod Nuclide Inventory Calculations,” *Transaction American Nuclear Society*, Vol. **102**, 560 – 561, ANS 2010 Annual Meeting, San Diego, CA, June 2010.
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Validation of a Monte Carlo Based Depletion Methodology Using HFIR Post-Irradiation Measurements,” *Transaction American Nuclear Society*, Vol. **101**, 696 – 698, ANS 2009 Winter Meeting, Washington, D. C., November 2009.
- D. Chandler, R. T. Primm, III, and G. I. Maldonado, “Power Distribution Analysis for the High Flux Isotope Reactor Critical Experiment 3,” *Transaction American Nuclear Society*, Vol. **100**, 603 – 604, ANS 2009 Annual Meeting, Atlanta, GA, June 2009.

Other Technical Reports

B. Rearden, J. Canik, K. Clarno, D. Chandler, T. Evans, B. Grove, S. Hogle, D. Kropaczek, J. Lefebvre, R. Lefebvre, D. Pointer, M. Shankar, G. Ilas, A. Yigitoglu, N. Cetiner, “ONRAMP – ORNL Nuclear Resources Analysis & Modeling Portfolio,” ORNL 2018-G01462/AM, Oak Ridge National Laboratory, 2018.

Selected Presentations at Technical Meetings (Primary Author Only)

D. Chandler, J. W. Bae, B. Betzler, and J. L. Meszaros, “HFIR Conversion to LEU Silicide Dispersion Fuel: A Design Study Progress Update,” USHPRR Inter-Pillar Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, January 30, 2020.

D. Chandler, “Overview of HFIR Conversion to Low-Enriched Uranium Fuel,” Presentation to the Basic Energy Sciences Advisory Committee Subcommittee on High Performance Reactor-Based Research Facilities, Oak Ridge National Laboratory, Oak Ridge, TN, January 8, 2020.

D. Chandler, “HFIR Conversion Design Study Progress Updates,” Presentation at the 2019 HFIR Conversion Project Status Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, December 12, 2019.

D. Chandler, “HFIR LEU₃Si₂-Al Conversion – Fuel Qualification Update and Discussion Slides,” Presentation at the 2019 HFIR Conversion Project Status Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, December 12, 2019.

D. Chandler, et. al., “High Flux Isotope Reactor Low-Enriched Uranium Conversion Activities with Focus on Design Studies,” Presentation at the 2019 NNSA Office of Material Management and Minimization Reactor Conversion Program – US High Performance Research Reactors Meeting, University of Missouri, Columbia, Mo, July 23, 2019.

D. Chandler, “High Flux Isotope Reactor Low-Enriched Uranium Conversion Overview and Status Update,” HFIR Futures Session 4 Discussion, Oak Ridge National Laboratory, Oak Ridge, TN, June 13, 2019.

D. Chandler, “Role and Potential Improvements to the HFIR Neutron Reflector,” HFIR Futures Session 3 Discussion, Oak Ridge National Laboratory, Oak Ridge, TN, May 28, 2019.

D. Chandler, “A brief scoping study for HFIR with D₂O reflector,” Presented to NScD ALD, Oak Ridge National Laboratory, Oak Ridge, TN, February 2019.

D. Chandler, “Cycle length and ²⁵²Cf production impact study for HFIR with D₂O reflector, Presented to NScD ALD, Oak Ridge National Laboratory, Oak Ridge, TN, February 2019.

D. Chandler, B. R. Betzler, D. H. Cook, G. Ilas, D. G. Renfro, “Neutronic and Thermal-Hydraulic Feasibility Studies for High Flux Isotope Reactor Conversion to LEU U₃Si₂-Al Fuel,” SCALE Users’ Group Workshop, Oak Ridge National Laboratory, Oak Ridge, TN, August 2018.

D. Chandler, C. Bryan, M. Crowell, J. Navarro, and R. Wham, “High Flux Isotope Reactor Permanent Beryllium Reflector Redesign Activities for Increased ²³⁸Pu Production Opportunities,” ²³⁸Pu production project review meeting with DOE and NASA, Oak Ridge National Laboratory, Oak Ridge, TN, August 31, 2017.

D. Chandler, B. Betzler, et. al., “High Flux Isotope Reactor Low-Enriched Uranium Core Design Study,” Presentation at the 2017 NNSA Office of Material Management and Minimization Reactor Conversion Program – US High Performance Research Reactors Meeting, 2nd Inter-Pillar Discussion Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, July 18, 2017.

D. Chandler, “Overview of NEWSKAN with an Emphasis on Inner Fuel Element Plate Inner and Outer Track Overloading Anomalies,” Presentation at meeting with BWXT, Lynchburg, VA, April 19, 2016.

D. Chandler, “High Flux Isotope Reactor Core Neutronics Models and Physics Calculations Overview”, Presentation at the PROSPECT Collaboration Meeting, Oak Ridge National Laboratory, Oak Ridge, TN, July 20, 2015.

D. Chandler, “HFIR ^{237}Np Target Irradiation Neutronics Safety-Basis Calculations,” ^{237}Np Target Irradiation Workshop, Oak Ridge National Laboratory, Oak Ridge, TN, October 22, 2014.

D. Chandler, “Historical Perspective and State of HEU and LEU Neutronic V&V for the High Flux Isotope Reactor,” U.S. High Performance Research Reactor Working Group Reactor Physics V&V Experts Meeting, Argonne National Laboratory, Argonne, IL, September 16, 2014.

D. Chandler, “Fuel Burn-up and Material Activation Analyses at the High Flux Isotope Reactor,” IAEA Consultancy Meeting, Vienna, Austria, March 24-28, 2014.

D. Chandler, “COMSOL Neutronics Modeling Development at the High Flux Isotope Reactor,” ORNL/COMSOL Symposium, May 2011.

Selected Posters at Technical Meetings

J. M. Risner, D. Chandler, C. R. Daily, G. G. Davidson, S. R. Johnson, and T. M. Pandya, “Transformational Capability for Integrated Analysis of HFIR Irradiation Experiments and Isotope Production Using High-Fidelity Modeling and Simulation,” Oak Ridge National Laboratory, Technical Poster Presented at the Science Advisory Meeting, August 18, 2015.

D. Chandler and M. Crowell, “HFIR Wide Range Counting Channel (WRCC) Model Based Tuning,” Technical Poster Reception for the Basic Energy Sciences Triennial Review, Oak Ridge National Laboratory, August 2015.

Non-Standard HFIR Safety Basis Calculations

HFIR safety basis calculations are archived, internal documents that may be made available upon request to the Research Reactors Division’s Division Director.

D. Chandler, “Heat Deposition Analysis for Horizontal Beam Tube 1,” C-HFIR-2016-035, Research Reactors Division, Oak Ridge National Laboratory, Calculations complete. (efforts paused)

D. Chandler, “Steady State Heat Transfer Calculations for a HFIR Core with Inhomogeneous OFE,” C-HFIR-2017-004, Research Reactors Division, Oak Ridge National Laboratory, Calculations complete. (efforts paused)

D. Chandler, “Fuel Element U_{26} Calculations for Edge Clad Evaluations,” C-HFIR-2018-027, Research Reactors Division, Oak Ridge National Laboratory, Prepared. (efforts paused)

D. Chandler, “Fuel Cycle Simulation for a HFIR Core with Inhomogeneous OFE,” C-HFIR-2016-037, Research Reactors Division, Oak Ridge National Laboratory, Prepared. (efforts paused)

C. J. Hurt and D. Chandler, “Post-Processing MCNP BOC and EOC Heat Deposition Data for RELAP5 Input,” C-HFIR-2021-002, Research Reactors Division, Oak Ridge National Laboratory, Expected 2021. (in-review)

D. Chandler, “Analysis of Inhomogeneous Outer Fuel Element Plates,” C-HFIR-2016-033, Research Reactors Division, Oak Ridge National Laboratory, Expected 2021. (in-review)

D. Chandler and D. H. Cook, “Effect of Combs on Safety Limits and Limiting Control Settings,” C-HFIR-2019-011, Research Reactors Division, Oak Ridge National Laboratory, January 2021.

D. Chandler, “Steady State Evaluation of OFE and O-475 Fuel Plates with Homogeneity Defects,” C-HFIR-2019-025, Research Reactors Division, Oak Ridge National Laboratory, April 2020.

- D. Chandler, “Steady State Evaluation of O-442 Fuel Plates with Homogeneity Defects,” C-HFIR-2020-002, Research Reactors Division, Oak Ridge National Laboratory, January 2020.
- D. Chandler, “Permanent Beryllium Reflector No.5 Redesign Nuclear Performance Studies,” C-HFIR-2017-039, Research Reactors Division, Oak Ridge National Laboratory, September 2018.
- D. Chandler, “Steady State Heat Transfer Analysis of O-489 Fuel Plates with Homogeneity Defects,” C-HFIR-2018-016, Research Reactors Division, Oak Ridge National Laboratory, July 2018.
- D. Chandler, “Neutronics Calculations to Support Pu-238 2nd Generation Target Irradiations,” C-HFIR-2017-015, Research Reactors Division, Oak Ridge National Laboratory, August 2017.
- D. Chandler, “Impact of Skewed Control Plates on Flux Tilt and Margin to Flow Instability,” C-HFIR-2015-030, Research Reactors Division, Oak Ridge National Laboratory, January 2017.
- D. Chandler, “Reactivity Worth Assessment of Molybdenum in Target Bundle,” C-HFIR-2016-042, Research Reactors Division, Oak Ridge National Laboratory, December 2016.
- D. Chandler, G. Ilas, B. Betzler, E. Sunny, “Safety and Performance Metrics Calculations for a HFIR Cycle with LEU Interim Fuel Design,” C-HFIR-2016-005, Research Reactors Division, Oak Ridge National Laboratory, July 2016.
- D. Chandler and B. Betzler, “Modeling and Depletion Simulations for a HFIR Cycle with LEU Interim Fuel Design,” C-HFIR-2016-004, Research Reactors Division, Oak Ridge National Laboratory, May 2016.
- D. Chandler, “Reduced Tantalum Control Plate Differential Worth and Acceptance Criteria,” C-HFIR-2016-022, Research Reactors Division, Oak Ridge National Laboratory, May 2016.
- D. Chandler, G. Ilas, and E. Sunny, “Safety and Performance Metrics Calculations for a HFIR Cycle with Representative Target Loading,” C-HFIR-2015-022, Research Reactors Division, Oak Ridge National Laboratory, April 2016.
- D. Chandler, “Nuclide Inventory and Decay Heat Calculations to Support Pu-238 Fully Loaded Target Irradiations in Inner Small VXF’s for up to Three Cycles,” C-HFIR-2015-025, Research Reactors Division, Oak Ridge National Laboratory, November 2015.
- D. Chandler, “Modeling and Depletion Simulations for a HFIR Cycle with Representative Target Loading,” C-HFIR-2015-013, Research Reactors Division, Oak Ridge National Laboratory, November 2015.
- D. Chandler, “Activation and Heat Generation Calculations to Support Pu-238 Fully Loaded Target Irradiations in Inner Small VXF’s for up to Three Cycles,” C-HFIR-2015-014, Research Reactors Division, Oak Ridge National Laboratory, September 2015.
- D. Chandler, “Control Cylinder and Safety Plate Heat Generation, Thickness Variation, and Reduced Tantalum Loading Studies,” C-HFIR-2013-005, Research Reactors Division, Oak Ridge National Laboratory, July 2014.
- D. Chandler, “Neutronics Analyses of an LEU Metal Foil Annular Target Irradiation in a Large VXF,” C-HFIR-2013-027, Research Reactors Division, Oak Ridge National Laboratory, December 2013.
- D. Chandler, “Cold Source Nuclear Heating Rates for the HEU and LEU Fueled HFIR,” C-HFIR-2012-014, Research Reactors Division, Oak Ridge National Laboratory, December 2013.
- D. Chandler, “Neutronics and Heat Generation Calculations to Support Pu-238 Fully Loaded Target Irradiations in HFIR VXF’s,” C-HFIR-2013-026 Revs. 0–1, Research Reactors Division, Oak Ridge National Laboratory, September 2013–December 2013.

D. Chandler, "Impact of IFE Inner Side Plate Reduced ID and Increased Loading of High Absorption Cross-Section Trace Elements on Reactor Performance," C-HFIR-2013-011 Revs. 0–1, Research Reactors Division, Oak Ridge National Laboratory, June 2013–July 2014.

D. Chandler, "Neutronics and Heat Generation Calculations to Support Pu-238 Partially Loaded Target Irradiations in HFIR VXFs," C-HFIR-2013-005, Research Reactors Division, Oak Ridge National Laboratory, April 2013.

D. Chandler, "Nuclear Heating and Radionuclide Inventory Calculations to Support NpO₂ Single Pellet Irradiations in HFIR," C-HFIR-2012-006 Revs. 0–4, Research Reactors Division, Oak Ridge National Laboratory, December 2012 – April 2013.

D. Chandler, "Physics Calculations to Support HFIR Ionization Chamber Assembly Design Changes," C-HFIR-2012-002, Research Reactors Division, Oak Ridge National Laboratory, April 2012.

D. Chandler, "Activation Analysis of HFIR Permanent Beryllium Reflector Number 3," C-HFIR-2010-022, Research Reactors Division, Oak Ridge National Laboratory, August 2010.

D. Chandler, "Waste Classification of the Beryllium Reflector," C-HFIR-2009-025, Research Reactors Division, Oak Ridge National Laboratory, October 2009.