Nuclear Fuels Extends Spur Zone Mineralization Over 1,000 Feet and Reports Best Intercept to Date from the Saddle Zone at the Kaycee Uranium Project

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VANCOUVER, Sept. 23, 2024 - Nuclear Fuels Inc. (CSE: NF) (OTCQX: NFUNF) ("Nuclear Fuels" or the "Company") announced today the results from the on-going drilling program at the priority Kaycee In-Situ Recovery ("ISR") Uranium Project in Wyoming's Powder River Basin. Drilling results from the Spur Zone have extended uranium mineralization over 1,000 feet. Two miles to the southeast, drilling at the Saddle Zone returned results of up to 0.233% eU_3O_8 (uranium) over 7.0 feet with a Grade Thickness ("GT") of 1.631. In the Powder River Basin ("PRB") of Wyoming potentially ISR-recoverable uranium mineralization with a GT of greater than 0.25 is considered suitable for inclusion in a potential wellfield.

Specific Highlights include:

- 1,000+ foot extension of the Spur Zone mineralization towards the Saddle Zone, located approximately two miles to the south, with drill intercepts up to 0.079% eU_3O_8 (uranium) over 8.0 feet and a GT of 0.632 and 0.117% eU_3O_8 over 5.0 feet with a GT of 0.585. GT or Grade Thickness, is defined as the product of the uranium grade ("eU_3O_8%") multiplied by the thickness of the intercept (in feet);
- Continued successful infill and step-out drilling at the Saddle Zone, with drill intercepts up to 0.233% eU_3O_8 over 7.0 feet and a GT of 1.631, representing the highest GT reported by Nuclear Fuels to date;
- 74% (34) of the drill holes completed herein returned anomalous gamma values, with 12 holes returning GT of 0.25 or better;
- Drilling continues and has expanded to other regional targets and areas of historic mineralization across the Kaycee Uranium Project.

To view project maps please visit: https://bit.ly/4ez2iQv

Greg Huffman, Chief Executive Officer, stated: "The results from this phase of drilling at the Kaycee Uranium Project are the best to date and illustrate the untapped potential of Kaycee. We continue to expand our drill program and truly believe we are in the early stages of a program that will offer up continuing positive results. Our ultimate goal remains to build a significant resource and advance the project to the point where it has the opportunity to become yet another uranium producer in the prolific and proven Powder River Basin."

Table of Significant Results from the Kaycee Uranium Project Drill Program

Drill Hole ID	Drill Hole Depth (Feet)	From (Feet)	To (Feet)	Grade (% eU_3O_8)	Thickness (Feet)	Grade Thickness
SPUR ZONE						
SR24_031	350	295.0	303.0	0.079	8.0	0.632
SR24_035	350	264.5	269.0	0.120	4.5	0.540
SR24_038	330	292.0	298.5	0.091	6.5	0.592
SR24_039	350	271.0	278.0	0.048	7.0	0.336
SR24_040	340	257.5	262.5	0.117	5.0	0.585
SR24_045	350	240.5	245.0	0.079	4.5	0.356
SADDLE ZONE						
SD24_088	310	218.0	224.0	0.109	6.0	0.654
SD24_090	370	289.0	294.0	0.190	5.0	0.950
SD24_093	310	224.5	229.0	0.266	4.5	1.197
SD24_094	330	253.0	256.5	0.127	3.5	0.445
SD24_095	400	337.0	344.0	0.233	7.0	1.631
SD24_100	350	287.5	300.5	0.089	13.0	1.157

Drill holes are reported that returned significant zones of uranium mineralization with >2 ft thickness at or above a grade cut-off of 0.02 per cent eU3O8 or that are relevant to exploration targeting. (1) %U_3O_8 by Gamma logging is a measure of gamma intensity from a decay product of uranium. Gamma log assays may be in disequilibrium with ICP-MS assays. Comparisons of U_3O_8 Gamma log and ICP-MS assays of Powder River Basin core samples indicate that U_3O_8 Gamma is comparable to ICP-MS uranium assay in the Powder River Basin. (2) Grade Thickness, or GT, is defined as the product of the mineral grade multiplied by the thickness of the mineralization.
The Kaycee Uranium Project drill program is designed to confirm and expand uranium mineralization associated with known historic resource areas, and test for new areas of mineralization along a 36-mile trend. Drilling continues at the Kaycee ISR Uranium Project with additional drill results pending from both the Spur and Saddle Zones. Currently, one drill rig is testing other historical resource areas beyond Spur and Saddle. Preparations are being made to initiate drilling on new high priority regional targets identified based on surface mapping and the evaluation of additional historic drill logs.

Spur Zone Drill Program, Kaycee Uranium Program
The Spur Zone drill program has extended the previously identified mineralization over 1,000 feet to the south, demonstrating the potential to significantly expand the size of historic zones of mineralization on the Kaycee Uranium Project. The extension trending towards the Saddle Zone mineralization, located approximately two miles to the southeast, provides further evidence of a potential connection between these two mineralized zones. Continued testing of this concept is a top priority for the ongoing drilling program.

In July 2024, 30 drill holes were completed to an average depth of 366 feet and were designed to extend and infill the north-south trending mineralization identified during the initial 2024 drill program. Of the 30 holes completed, 73% (22 drill holes) returned anomalous gamma values; 6holes returned a GT of 0.25 or better, including 4 holes with a GT greater than 0.5. Highlights include Hole SR24-031 with 0.079% eU_3O_8 over 8.0 feet, with a GT of 0.632, from a depth of 295 feet. This hole was a 400 foot step-out to the south from Hole

SR24-024 which had previously been reported with a GT of 0.436 (Nuclear Fuels NR August 29, 2024). Hole SR24-040 was drilled a further 400 feet to the south of Hole SR24-031 and intercepted 0.117% eU_3O_8 over 5.0 feet, with a GT of 0.585, from a depth of 257.5 feet. The extended mineralization has been confirmed over an additional 200 feet to the south and remains open along trend.

Saddle Zone Drill Program, Kaycee Uranium Project
Drilling completed in July 2024 has confirmed and expanded the known mineralization at the Saddle Zone. Additional drilling will test for further extensions of the main trend and will follow up on newly identified anomalous mineralization encountered within deeper formations to the southwest of the main Saddle trend.

16 drill holes were completed at the Saddle Zone to an average depth of 483 feet to infill and extend historic mineralization. Of the 16 holes completed, 75% (12 holes) returned anomalous mineralization; 6 holes returned GT of 0.25 or better, including 3 with a GT in excess of 1.0. Highlights include Hole SD24-095, drilled to test the northern extension of north-south-trending mineralization which defines the eastern side of the Saddle Zone. Hole SD24-095 returned 0.233% eU_3O_8 over 7.0 feet, with a GT of 1.631, from a depth of 337.0 feet representing the best hole drilled by Nuclear Fuels at the Kaycee Project. Hole SD24-100 was also drilled within this north-south trend and returned 0.089% eU_3O_8 over 13.0 feet, with a GT of 1.157, from a depth of 287.5 feet. Hole SD24-093 was drilled to test the central portion of the mineralized trend identified during the Company's initial drill program and returned 0.266% eU_3O_8 over 4.5 feet, with a GT of 1.197, from a depth of 224.5 feet.

Kaycee Uranium Project, Wyoming

The Kaycee Project in Wyoming's PRB, Nuclear Fuels' priority project, consists of over 42 square miles of mineral rights over a 36-mile mineralized trend hosting more than 110 miles of identified roll fronts. The Kaycee Project is believed to be the only project in the PRB where all three known historically productive sandstone formations (Wasatch, Fort Union, and Lance) are mineralized and potentially accessible for ISR extraction. The Kaycee Project, under Nuclear Fuels, represents the first time since the early 1980's that the entire district is controlled by one company.

In 2023, Nuclear Fuels acquired the Kaycee Project from enCore Energy Corp., which retains a back-in right for 51% of the project by paying 2.5X the exploration costs and financing the Kaycee project to production (costs recoverable from production) upon Nuclear Fuels establishing a minimum 15 million pound eU_3O_8 43-101 compliant resource.

Wyoming is a proven and prolific uranium producer with a pro-energy government and established regulatory regime for the permitting and extraction of uranium through ISR technology. Wyoming is one of the few "Agreement States" hosting ISR uranium deposits, where the federal government and the Nuclear Regulatory Commission have ceded regulatory authority to the state government, permitting and advancing uranium projects is more efficient and streamlined as compared to most other states. Wyoming, with over 250 million pounds of historic uranium production, ranks as the state with the second most uranium production to date; most of which has been through the ISR technology since 1990; predominantly from the PBR.

Drill holes were completed by Single Water Services using a rotary drill rig. Chip samples are collected for lithological logging every five feet. Century Geophysics of Tulsa Oklahoma is contracted to conduct downhole gamma ray, resistivity, spontaneous potential, and deviation. Century Geophysics calibrates the downhole tools in the US Department of Energy uranium logging Test pits in Casper Wyoming, to ensure the accuracy of the down hole gamma ray log measurements. % eU_3O_8 is a measure of gamma intensity from a decay product of uranium and is not a direct measurement of uranium. Numerous comparisons of eU_3O_8 and chemical assays of PBR core samples indicate that eU_3O_8 is a reasonable indicator of the actual uranium assay.

The technical content of this news release has been reviewed and approved by Mark Travis, CPG., a contractor to the Company, and a Qualified Person as defined in National Instrument 43-101.

About Nuclear Fuels Inc.

Nuclear Fuels Inc. is a uranium exploration company advancing early-stage, district-scale In-Situ Recovery

("ISR") amenable uranium projects towards production in the United States of America. Leveraging extensive proprietary historical databases and deep industry expertise, Nuclear Fuels is well-positioned in a sector poised for significant and sustained growth on the back of strong government support. Nuclear Fuels has consolidated the Kaycee Wyoming district under single-company control for the first time since the early 1980s. Currently executing its second drill program at the Kaycee Project, the Company aims to expand on historic resources across a 36-mile trend with over 110 miles of mapped roll-fronts defined by 3,800 drill holes. The Company's strategic relationship with enCore Energy Corp., America's Clean Energy Company™, offers a mutually beneficial "pathway to production," with enCore retaining the right to back- in to 51% ownership in the flagship Kaycee Project in Wyoming's prolific Powder River Basin.

W: www.nuclearfuels.energy

The Canadian Securities Exchange has not reviewed this press release and does not accept responsibility for the adequacy or accuracy of this news release.

Certain information in this news release constitutes forward-looking statements under applicable securities laws. Any statements that are contained in this news release that are not statements of historical fact may be deemed to be forward-looking statements. Forward-looking statements are often identified by terms such as "may", "should", "anticipate", "expect", "potential", "believe", "intend" or the negative of these terms and similar expressions. Forward-looking statements in this news release include, but are not limited to, statements relating to planned exploration programs and the results of additional exploration work in seeking to establish mineral resources as defined in NI43-101 on any of our properties. Forward-looking statements necessarily involve known and unknown risks, including, without limitation, risks associated with the completing planned exploration programs and the results of those programs; the ability to access additional capital to fund planned and future operations; regulatory risks including exploration permitting; risks associated with title to our mineral projects; the ability of the company to implement its business strategies; and other risks including risks contained in documents available for review at www.sedar.com under the Company's profile. Readers are cautioned not to place undue reliance on forward-looking statements as there can be no assurance that the plans, intentions or expectations upon which they are placed will occur. Such information, although considered reasonable by management at the time of preparation, may prove to be incorrect and actual results may differ materially from those anticipated. Forward-looking statements contained in this news release are expressly qualified by this cautionary statement.

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