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# GLOSSARY OF HANFORD TERMINOLOGY

B. B. LANE

FEBRUARY 1, 1961

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## HANFORD ATOMIC PRODUCTS OPERATION

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February 1, 1961

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INTRODUCTION

The previous edition of this Glossary was issued in 1954 as HW-32464. In that time many new expressions have come into use and additional old terms have come to light. This edition revises and supersedes the former one and adds about 150 new words and abbreviations.

The scope has not been changed. The entries consist of Hanford jargon as it has been found in written reports and from personal conversations. Current security codes are not included. Trade names such as IMMERSCOPE and PROBOLOG are not included. Nor will there be found here codes for fuel elements, separations streams, or IBM computer programs.

Terms found to be obsolete are marked with an asterisk.

It will be a convenience to many readers of reports if authors will explain an abbreviation the first time it is used in the text. This is particularly important in the case of formal reports.

\*A Uranium source designation. Virgin metal from Iowa State College.

\*A Slug Standard uranium slug of 1.359" nominal diameter.

ADC Analog to digital converter.

ALSi slop Slug reject designation. Any piece on which ALSi has become attached to the exterior surface of the canned assembly.

AMU level Aqueous make up level.

AD *Decontamination agents composed primarily of NaOH and/or KSH and KMnO<sub>4</sub>*

\*AP Slug reject designation: Air pocket.

APACE *A two-step decontamination procedure consisting of (1) NaOH + KMnO<sub>4</sub>, and (2) NH<sub>4</sub> citrate and EDTA*

APT Adequacy Power Test.

AR Slug reject designation: Assembly Rejects. Includes wide braze line, ALSi slopover, non-seats, high caps, cocked caps, off cycle, out-of-process, can penetration, spire leakers and internal can wall distortion.

Ash Can Slug A tube filled loosely with enriched UO<sub>2</sub> powder and self-sintered at high temperatures.

A.S.P. Alpha Simpson proportional counter, gas flow type.

ATP Acceptance test procedure.

B Process Unbonded canning process used for bismuth slugs and special request material.

B Slug Unbonded, canned bismuth slug.

Ball 3-X Third safety device consisting of neutron absorbing balls which would be released into the pile for additional control to avoid a catastrophic event.

Banjo machine *Equipment for refueling during operation HW 73195 P.5*

Bayonet A sampling device approximately two feet long and fitted with a disposable pipet for taking process samples.

\*Beta Experiment To test the stability of fuel elements in liquid metal upon pile exposure to neutrons, particularly with respect to U-235 alloys in liquid sodium.

Betty Snoops Radiation detection instrument (Ion current type).

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\* Entries considered to be obsolete.

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BF<sub>3</sub> Counter A slow and intermediate neutron sensitive portable monitoring instrument.

BFC-6 Waste metal recovery designation. Uranium oxide recovered from bronze flux.

Big Sucker Air filter type instrument used for counting alpha radiation by collecting dust in areas where there is some possibility of product being associated with the dust in the air or as an aerosol of the product compound itself.

\*Bitrex Process Separation of plutonium by BiPo<sub>4</sub> precipitation, metathesis of the plutonium product with KOH and blending with Redox oxidizer solution. The uranium stream was piped to the TBP Plant for recovery of UNH.

\*BL Slug reject designation: Braze line. Pieces rejected for wide layers of AlSi between cap and can.

BLC Slug reject designation: Braze Layer Contamination. Includes braze layer impurity, pinholes in weld and lapover in weld.

BLI Slug reject designation: Braze Layer Integrity. Includes wide weld beads, bond test rejects, radiograph voids and voids in braze layer after facing.

Blinker-Squawker Rate Meter.

Blip A defect on the wall of a reactor tube.

Blister On a wall in a cold area, a lead protuberance which may shield a hot valve, instrument or assembly.

\*Bloated Swine A Geiger-Mueller tube.

BORP Bottom of riser pressure.

BOTL Bulk outlet temperature limit.

BPID Book physical inventory difference.

\*BPX Bismuth Phosphate Plant with facilities capable of converting to Thorex Process.

\*BT (1) Uranium source designation. Solid scrap from metal hydride.  
(2) Waste metal recovery designations. Extrusion butts and very dirty rod ends.

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Bull Slugs	Candidate IPR fuel element, 1.8 inch O.D aluminum jacket with cored uranium.
Bumper Slug	A modification of a self-supported slug with small supports designed for use in ribbed tubes.
BW	Slug reject designation: Bad Weld.
*C	Uranium source designation. Experimental metal from the University of California.
C - 6	Waste metal recovery designation. Sodium diuranate salt from waste and neutralization cycle.
C Process	Unbonded, cold sized canning process employing a fusion weld closure.
C Slug	Enriched uranium-aluminum alloy slug (approximately 4 per cent uranium by weight, of which 93.2 per cent is U-235).
*Calcined Catalyst	ThO <sub>2</sub>
Cart Poppy	An instrument for use with air proportional and scintillation probes.
CC	Slug reject designation: Cocked cap.
CEP-1	Corrosion equipment prototype out of pile loop in KE reactor.
CFEM	Continuous Fuel Element Measurement device.
Chang and Eng	Radiation detection instrument (Ion current type).
Chemical 10 - 66	Thorium.
*Chemical 12 - 7	Calcium metal.
*Chemical 14 - 92	Polonium.
*Chemical 18 - 12	Thorium oxide.
*Chemical 19 - 18	Magnesium oxide.
*Chemical 19 - 29	Nickel carbonyl.
*Chemical 37 - 77	Bismuth.
*Chemical 40 - 8	Gallium.
*Chemical 54 - 40	Lithium fluoride.

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\*Chemical 60 - 48 Calcium.

\*Chemical 62 - 50 Lithium-aluminum alloy.

\*Chemical 64 - 52 Magnesium oxide.

\*Chemical 66 - 54 Tritium.

\*Chemical 68 - 56 Bismuth.

\*Chemical 70 - 58 Gallium.

\*Chemical 72 - 60 Polonium.

\*Circle Four, (4) Fernald  $\alpha$  rolled, salt bath  $\beta$  transformed uranium rod.

CMP Crane Maintenance Platform.

COH Can opening hood, Tritium Production and Isolation Process.

Cold Closure Closure of a slug can performed by upsetting can wall to form the cap. Also called Point Closure and Line Closure.

\*Combarate  $\text{Th}(\text{C}_2\text{O}_4)_2 \cdot 6\text{H}_2\text{O}$

\*Combarcarbase  $\text{ThO} \cdot \text{CO}_2 \cdot \text{H}_2\text{O}$

\*Combarcle  $\text{ThCl}_4 \cdot 8\text{H}_2\text{O}$

\*Combarfly  $\text{ThO}_2 \cdot 4\text{H}_2\text{O}$

\*Combarnite  $\text{Th}(\text{NO}_3)_4 \cdot 4\text{H}_2\text{O}$

\*Combarox  $\text{ThO}_2$

Cored Slug Tubular slug, externally cooled only.

Cornpopper An indicating board connected to a scanner in such a way that it shows by lights when temperatures in certain selected tubes are exceeding certain values.

Cow Slugs Candidate IPR fuel elements 1.8 inches O.D., 0.58 inch I.D. aluminum jacket with uranium core.

CPR Slug reject designation: Component Preparation Rejects. Includes caustic pits, AlSi chips inside sleeves, AlSi leaking through sleeves, warped fuel elements, mixed components, concave or convex bottoms, wrinkled cans or pop-ups due to moisture and stuck sleeves.

\*CRD-2 Waste metal recovery designation. Impure uranium oxide from chip recovery operation.



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\*CRD-6 Waste metal recovery designation. Pure uranium oxide from chip recovery operation.

Critical Power - Grade S Removal of electrical backup facilities during shutdown of a reactor.

Critical Power - Grade W Planned removal of electrical backup facilities during operation of the reactor.

Critical Power - Grade Y Unscheduled loss of 13.8 kv bus(es) under emergency conditions - or critical system low voltage low frequency or overload conditions making it necessary to shut-down reactors.

Critical Power - Grade Y Alert Loss of one 230 kv supply to any area (unscheduled discontinuity of the 230 kv HAPO loop) permitting Process Operations the choice of whether or not to continue reactor operations.

Critical Power - Grade Z Complete loss of electrical power to a reactor.

Cutie Pie Radiation detection instrument (Ion current type).

CX Process Natural U-Zircaloy-2 coextrusion.

\*D Uranium source designation. Virgin metal from duPont.

\*D-2 Waste metal recovery designation. Uranium and uranium oxide fines grossly contaminated with foreign material.

\*D-6 Waste metal recovery designation. Pure uranium oxide from machining and extrusion press and quench tank.

\*DC Slug reject designation. Defective aluminum can.

DCF Displacement column facility.  
DF *Decomposition factor*  
Dih Delta inhours. (See Inhour)

Dingots "Direct" ingots produced by simultaneous reduction and casting, also called massive derbies.

Do-bad An unknown contaminant in a solvent, which interferes with the solvent extraction process.

DOG Dissolver off gas.

Dogboning An effect in which a slug of uranium becomes enlarged at each end during heat treatment.

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Dog Legs Offsets caused by wandering of the drill during the fabrication of cored slugs.

Dogwood Uranium enriched to 37.5% U-235.

Donut A cast iron sleeve which fits over a gun-barrel and prevents neutrons from streaming through.

Door Stop A sample container designed to contain a 1 ml. sampling pipet and provide a minimum of 2- $\frac{1}{2}$  inch stainless steel shielding completely around the sample. So called on account of its weight and the difficulty of removing the plug.

DOP Test A test performed by passing smoke from heated dioctyl phthalate through an air filter.

\*Double Diameter Dummy A solid steel cylinder approximately eight inches in length, having for six inches a diameter of approximately 1.4 inches, and for the remaining two inches a diameter of one inch.

Double-Jacketed Slug See: Warning Slug.

DTX Process Differential thermal expansion canning process.

Dual Cans A standard can enclosed in an expanded can with walls pressure welded together.

Duplex Slug Solid thorium core encased in a thin foil of oralloy.

\*E Uranium source designation. Virgin metal from Electro-Met.

E Metal (1) Uranium isotopically enriched to 0.94% or 1.75% U-235 by weight.  
(2) Also called E-1 Metal.  
(3) Also called Ike Metal.  
(4) Also called Eisenhower Metal.

E-1 Metal See: E Metal.

EBT External bond tester.

ECT Effective central tubes: the power level divided by the average of the ten most productive tubes in the reactor.

\*Eggs Cylinders of uranium cast on the end of a billet to be removed and used in testing the quality of the metal.

EGM Eltronics Geiger counter survey meter.

\*Eisenhower Metal See: E Metal.

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Elephant Slugs Candidate IPR fuel element, 1.8 inches O.D., 0.58 inch I.D., aluminum jacket with wafered uranium.

ELMO Experimental loop model out of reactor.

E-N Loading A loading pattern for tritium production with enriched slugs and Al-Li slugs.

ER Lot A terminal lot of M and/or Z material which is stained in processing and held in one lot until a suitable lot size is accumulated for reprocessing and cleaning.

\*F Uranium source designation. Virgin metal form Mallinckrodt Chemical Works.

F Factor Specific activity factor (or isotopic correction factor) = weight of Pu/count/min.

F Material Finished or purified graphite.

F Process Lead dip canning of  $\beta$  heat-treated uranium.

FETR Fuel Element Test Reactor.

\*Fish Pole Measuring instrument for beta and gamma radiation.

\*Fish Tail Slug reject designation. Describes discontinuities at the end of rolled rods as a result of treatment given in rolling.

Fissium Fs An alloy consisting of 0.5 w/o Zr, 2.6 Mo, 4 Ru, 0.6 Rh and 2.3 Pd.

Five Fold Beta, gamma hand and foot counter.

Flower Pot A flower-pot-like container placed at the bottom of vertical safety rod channels during the ball 3-X third safety system installation.

Fly's Eye A viewing window behind the discharge face of a reactor.

FM Slug Standard uranium slug of 1.356 inches diameter and 4 inches nominal length.

Four Fold Alpha hand counter.

FR Slug reject designation: Facing Rejects. Includes contour, length and finish.

Frost Test A test for defects in a canned slug element, in which a coating of acenaphthene melts in regions adjacent to unbonded areas when the element is passed through an induction coil.

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FT Slug reject designation: Frost test. Any pieces exhibiting a melted area of any size on the frost coating upon passage through the frost test machine at the prescribed power level and travel rate. Rejects are classed as #1, 2, 3 or 4 to denote location and size of the defect.

\*G (1) Uranium source designation. Eggs from metal hydride.  
(2) Waste metal recovery designation. Sample eggs.

Garbage can fuel element A compacted  $UO_2$  fuel element so called because of the longitudinal flutes which it contained.

Gatling Gun A lead filled cylinder with a number of tubes passing through it parallel to the axis. Test materials are charged into a reactor from this gun and irradiated test materials discharged from the reactor into the gun. A portion of the gatling gun is designed to rotate about the axis of the cylinder to provide shielding when irradiated materials are in the gun.

GBCR Graphite Connection Boiling Reactor.

Glory Hole A cave in Gable Mountain for storage of product.

Green Metal Irradiated metal which has not been cooled long enough to undergo processing.

Grey Spline *A spline containing 50-60% of the usual amount of poison. HW 23509*

Greyfish An underwater thermometer of the resistance type used for plotting the river temperature rise pattern in effluent from a retention basin.

Grizzly A coarse mask grill, usually made of steel, to restrict entry of large objects into the discharge line from the retention basin.

\*Group I Metal Eight-inch, gamma extruded, triple-dipped, outgassed, canned slugs.

\*Group II Metal Four-inch, gamma extruded, triple-dipped, outgassed, canned slugs.

\*Group III Metal Four-inch, alpha rolled, lead-dipped canned slugs.

\*Group IV Metal Four-inch, alpha rolled, triple-dipped partially transformed slugs.

\*Group V Metal Four-inch, completely transformed, alpha rolled, triple-dipped canned slugs produced subsequent to August 28, 1948.

\*Group VI Metal Four-inch, completely transformed, alpha rolled, triple-dipped canned slugs produced subsequent to June 27, 1949.

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\*Group VII Metal Four-inch, completely transformed, alpha rolled, triple-dipped canned slugs produced between November 30, 1949 and April 26, 1951.

\*Group VIII Metal Four-inch, completely transformed alpha rolled, triple-dipped canned slugs produced subsequent to April 26, 1951.

\*Group IX Metal Eight-inch, completely transformed, alpha rolled, triple-dipped canned slugs produced subsequent to January 16, 1952.

\*Group X Metal Four and eight-inch Simonds and Fernald rolled, HAPO or Fernald machined, triple-dipped canned slugs.

\*Group XI Metal Eight inch Fernald rolled and machined, triple-dipped canned slugs.

\*Group XII Metal Four-inch Fernald rolled and machined, triple-dipped canned slugs.

Gunbarrel A steel sleeve which passes through the biological shield of a reactor at each tube channel. Process tubes pass through the gunbarrel into the graphite moderator.

\*H Slug reject designation: Perforation in jacket.

H Metal Simulated C or J slug.

\*H-2 Slug for Beta Experiment. Titanium pin.

\*H-3 Slug for Beta Experiment. Zirconium pin.

\*H-10 P-10 program in which some of the plutonium production in the H Pile would be given up in order to load P-10 target slugs, supplemented by J slugs, into this pile in sufficient quantity to achieve the desired temporary production requirement.

\*Handee Alpha hand counter.

HC Slug reject designation: High cap (non-seat).  
HCF *Hot channel factor* (HW 6750-7)  
HCR Horizontal control rods.

HCTF Hanford controlled temperature facility.

\*Heavy Metal Designation for uranium at Argonne National Laboratory.

H.M. Measuring instrument chamber used with Beckman Micro-Micro ammeters and with or without Micromax Recorders to give a continuous record of gamma radiation level at points throughout the process buildings. It may be used to measure beta particles when equipped with a suitable open window.

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\*J Process                    AlSi coating procedure for canning J Slugs.

J Slug                        Enriched uranium-aluminum alloy slug (7.5 per cent uranium by weight, of which 93.2 per cent is U-235).

\*J-1                          Slug for Beta Experiment. Uranium oxide in stainless steel pins.

\*J-4                          Slug for Beta Experiment. Spun titanium pin.

Jumper                        A precision section of pipeline or electrical equipment installed remotely as a connection between permanent nozzles on a wall and nozzles on process equipment. It may have control instrumentation built into it.

Juno                          Alpha, beta, gamma dual shield ion chamber survey meter.

\*K                            Uranium source designation. Virgin metal from Mallinckrodt Chemical Works.

K Material                    Uranium cast at Fernald from unpickled derbies, plus a high proportion of recast stock whose hydrogen content has been largely depleted.

\*KC                          Uranium source designation. Scrapped metal from Mallinckrodt Chemical Works.

†Kitten                      A recycle batch run which, under normal conditions, would be waste solution of an ordinary batch run in either "B" or "T" plant, but which contains a prohibitive per cent of product due to mechanical or operating failure during batch run.

\*L                            Uranium source designation. Virgin metal from Iowa State College.

Line Closure                See: Cold Closure.

Little Demon                See: PRTR.

Little Sucker                Air filter type instrument used for counting alpha radiation by collecting dust in areas where there is some possibility of product being associated with the dust in the air or as an aerosol of the product compound itself.

Long Tom                     A horizontal alpha pulse chamber (counter).

LRAM                         Linear remote area monitor.

LTR                          Lattice Testing Reactor. Also called Physical Constants Testing Reactor (PCTR).

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LV Test Leak vulnerability test.

LVDT Linear Voltage Differential Transformer.

M-22 Measuring instrument used for checking gamma radiation in stack gases on a shift basis.

\*25 M Eight-inch Fernald rolled and machined, lead dipped canned slugs charged in pile under Production Test 313-105-25M.

M Material Uranium cast at MCW from virgin derbies which have been pickled.

\*M Slug Standard machined uranium slug of 1.350 nominal diameter.

MABIE A multi-stage agitated bed ion exchange contactor.

\*Maple F Pile

MARG A unit equal to 10 grams of product content as calculated at the time of discharge of the irradiated uranium.

Mark V Dissolver A Dissolver for E metal for NPR fuels.

Massive Derbies See: Dingots .

Mattress Plate Steel plates located in the storage basin directly below the discharge face. Plates are installed at an angle such that the fuel elements receive a cushioned impact and at the same time are directed into the pickup chutes.

\*MC-6 Waste metal recovery designation. Melt plant furnace insulation and lining materials contaminated with uranium oxides.

\*MD-2 Waste metal recovery designation. Impure uranium oxide from melt plant operation.

\*MD-4 Waste metal recovery designation. Used graphite grossly contaminated with uranium oxide from melt plant and canning operations.

\*MD-6 Waste metal recovery designation. Pure uranium oxide from melt plant operation.

\*Meat Wagon A stainless steel lined army hospital railway car for transporting product.

MEEF Metal examination facility.

+ Mint Tritium.

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\*MJ-1 Redox Process.

\*MJ-2 234-5 Facility.

\*MJ-3 "Radio-lanthanum" Process or Rala Process.

\*MJ-4 Tributyl Phosphate Process.

\*MJ-5 Metal sweetening and conversion of UNH to  $UO_3$ .

Micrometer PRV A pressure relief valve with a micro adjustment.

Minometer Radiation detection instrument (Ion current type).

MM Slug A canned assembly of alternating disks of Th and Al, Mg, or Zr to which has been added 0.4 gms of U-235 per c.c.

Monitron Radiation detection instrument (Ion current type).

Monster A shipping cask.

MPAD Maximum permissible average dose.

MS Slug reject designation: Marred surfaces.

Mutton Gallium.

MWD/AT Megawatt days per adjacent or average ton (2000 lbs.) of uranium.

MWD/CT Megawatt days per central ton (2000 lbs.) of uranium.

MWD/T Megawatt days per ton (2000 lbs.) of uranium.

\*Myrnalloy Thorium.

\*MZ Slug Standard uranium slug of 1.353 nominal diameter.

\*N Uranium source designation. Virgin metal from Electro-Met.

N Material Target material.

N Slug Lithium-aluminum alloy slug, nominally 3.5% lithium by weight.

\*NB Uranium source designation. Cast rods from National Bureau of Standards.

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NC Slug reject designation: Not canned. This classification includes pieces which have been put through one or more stages of the canning process, but for some reason no portion has been inserted in a can.

Neut A fast neutron sensitive portable monitoring instrument used to measure neutron radiation fields around an operating reactor.

\*NH Slug Aluminum - 3.5% lithium alloy slug, cold sized canned at HAPO by reclamation of 6 inch and 4.25 inch slugs manufactured during first P-10 program.

Nozzle Aluminum cylinder with a flange at one end which is bolted to the flange of a gunbarrel. The nozzle has pig-tail connections for water feed. Lugs are provided at the end of the nozzle to fasten tube cap.

NPF Non-production fuel.

NPR New Production Reactor.

\*NR Uranium source designation. Virgin metal from Electro-Met.

\*NS Slug Aluminum - 3.5% lithium alloy scrap, reprocessed into rod and cold sized canned at HAPO.

NS Slug reject designation: Non-seated slugs. Any piece in which the slug has not been pressed to the bottom of the can. This classification also covers pieces in which the cap is not completely seated against the upper end of the slug.

\*NT Catalyst  $\text{Th}(\text{NO}_3)_4 \cdot 4\text{H}_2\text{O}$

NTPT Nozzle-to-process-tube seal in PRTR.

Nucleometer Rate meter.

\*NX Slug Aluminum - 3.5% lithium alloy slug, cold sized canned at HAPO by reclamation of 4 inch slugs manufactured during first P-10 program.

OC Slug reject designation: Off-cycle in canning operation.

OCD Operational charge-discharge.

\*Olive B Pile.

\*Olive Plutonium-238.

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\*1, 1, 1 Pieces            Indicates slugs have passed all three 300 Area tests satisfactorily.

ORA                        Organic recirculation apparatus.

Oralloy                    Uranium isotopic alloy (93.4% U-235, 6.6% U-238).

OSI                        Operational severity index.

Overbore Slug             An oversize slug approximately 2" in diameter by 8" long for the C reactor overbore test.

\*P                         Slug reject designation. Penetration (bonding alloy partially or completely dissolves can).

P-9                        Heavy Water.

\*P-10                     Tritium and/or Tritium Production and Isolation Process.

\*P-10-A Slug             Aluminum - 3.5% lithium alloy slug, cold canned during first P-10 program at HAPO for the H-10 load. P-10-A slugs were also used for flattening purposes.

P-11                      Critical Mass Program.

P-12                      Exponential Pile Program.

P-13                      Navy fuel test channel.

\*Paint Pail                Measuring instrument for beta and gamma radiation.

\*Paint Pot                A windowed alpha survey meter.

\*Palm                     Neptunium-237.

\*Palmolive                Program for recovery of Neptunium-237 and the subsequent production and recovery of plutonium-238.

Papoose                  Capsule carbon specimen holders used in testing radiation effects on graphite.

\*PB.                      Slug reject designation: Poor bond. Any piece which exhibits an incomplete bond between the slug and the cap or can.

PCCF                      Poison column control facility.

PCE loop                  Prototype concept evaluation for NPR.

\*PCTI                     Panellit Coordination Trip Identification system.

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PCTR Physical Constants Testing Reactor. Also called LTR.

Peanut Sample container (0.3 ml. capacity) for Building 231 analytical samples.

Pebble Slug Pellets of uranium imbedded in a matrix of magnesium and U-235.

PEN Penetrameter, a sensitivity indicating device used in radiographs.

Pen Slug reject designation: Penetration. Pieces which have developed areas in which molten ALSi has passed completely through the can wall.

\*Penbarate  $\text{Th}(\text{C}_2\text{O}_4)_2 \cdot 6\text{H}_2\text{O}$

\*Penbarcarbase  $\text{ThO} \cdot \text{CO}_2 \cdot \text{H}_2\text{O}$

\*Penbarcle  $\text{ThCl}_4 \cdot 8\text{H}_2\text{O}$

\*Penbarfly  $\text{ThO}_2 \cdot 4\text{H}_2\text{O}$

\*Penbarnite  $\text{Th}(\text{NO}_3)_4 \cdot 4\text{H}_2\text{O}$

\*Penbarox  $\text{ThO}_2$

Perf A thick walled cylinder of aluminum which has holes punched or drilled on its circumference. The perf is used as a positioning piece for fuel elements.

Pete Radiation detection instrument used in determining the counting rate of P-10 contaminated samples. Primarily a qualitative rather than quantitative instrument, it is semi-quantitative only in that it gives a higher counting rate for more highly contaminated samples.

PH Slug reject designation: Pin-hole in weld.

PHA Pulse Height Analyzer.

Phoenix Shipping cask for lanthanum.

Pigtail A curved section of pipe used to feed the process water into a process tube from a crossheader.

\*Pine D File.

\*Pipe Slug reject designation. Term used to describe a shrinkage cavity in a casting.

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\*Pirates 1-4 Pressurized in-reactor recirculation apparatus, temperature elevated. Superseded by KER.

PITA Process improvement test authorization.

Plurad Radiation detection instrument (Ion current type).

Pluto Radiation detection instrument (Ion current type).

Plutonium Cows Plutonium nitrate solutions used in solvent extraction concentration of Am-241 which had grown from Pu-241. So called because the Am-241 is "milked" repeatedly from the Pu-241.

Plutonium Demonstration Reactor See: PRTR.

Point Closure See: Cold Closure.

Poison Any material, whether charged into a reactor or not, which absorbs neutrons and thus reduces the flux available for fission and capture.

\*Polymer Heavy water.

Poppy Survey instrument for alpha surface contamination.

Poppy Amplifier Rate meter.

\*Postum Irradiated bismuth slug.

Potato Drill A drill about the shape of a large potato and having cutting edges on one end and sides; used to drill out compressed aluminum in a channel.

P-R Can Product receiver (50 liter capacity) used to carry the process solution from Building 224 to Building 231.

PRCF Plutonium Recycle Critical Facility.

\*Precious Metal Designation for uranium at Argonne National Laboratory.

\*Product 79 ThO<sub>2</sub>

Projection Fuel Elements Hanford-type fuel element bearing projections so that the fuel element will support itself in a ribless process tube.

Proteximeter Radiation detection instrument (Ion current type).

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PRP Pu Recycle Program.

PRPR See: PRTR.

PRTR Plutonium Recycle Test Reactor. Also previously called Plutonium Demonstration Reactor, Plutonium Recycle Program Reactor (PRPR), and Little Demon.

PSF Poison spline facility.

PSRA Parallel-series relay arrangement.

PTFC *Process Tank From Condensate*

Q Slug Thorium Slug.

*Queen*  
Queenie Analyzer *Pu-Ur - Research - Extraction*  
Scaler.

Quickie Method for discharging a ruptured fuel element within the minimum reactor down time.

Quickie Facility Test hole 2d in KE reactor.

\*Quinto Puss A five-armed geiger counter installed in doorways.

\*R-1 Slug for Beta Experiment. Uranium dioxide in stainless steel pin.

\*R-2 Slug for Beta Experiment. U-238 foil.

\*R-3 Slug for Beta Experiment. Natural uranium wire and 347 stainless steel holder.

\*R-4 Slug for Beta Experiment. Depleted natural uranium foil.

\*R-5 Slug for Beta Experiment, U-235 and titanium pin in stainless steel jacket.

\*R-10 Program in which the DR Pile would be devoted entirely to P-10 production.

\*R-50 See: MJ-3.

Rabbit Reactor Concept of a heterogeneous lattice fluidized bed reactor.

RAD Unit of absorbed dose equal to 100 ergs per gram. Absorbed dose of any ionizing radiation is the amount of energy imparted to matter by ionizing particles per unit mass of irradiated material at the place of interest. Replaces rep.

R-C Can Recycle can (50 liter capacity) used in the 231 Building for accumulating plutonium solutions.

Redwood Car *A converted hospital in road car.*

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REP Loop Rupture equipment prototype loop in KE reactor.

\*RG Rubber glove line, for production of fabricated weapon components, 1949-1953.

RM Radiation monitoring.

RMA Remote mechanical line which replaced the RG line for production of fabricated weapon components.

RMB Remote mechanical line for refabrication of weapon components.

RMC Remote mechanical line for production of buttons, similar to RMA, but having more provision to reduce radiation exposure to personnel.

ROL Reactor Operating Limits.

RTD Resistance temperature detector.

\*RU Uranium source designation. Virgin metal from Electro-Met.

RW Radiological warfare.

S-22 Measuring instrument used for checking gamma radiation in ponds and drainage canals on a bi-weekly basis.

\*Sampson Air propelled ratemeter, a battery powered portable survey meter.

Sandy Radiation detection instrument (Ion current type).

SBVM Swelling behavior volume monitored.

SCORESYFAT Self container recycle system for actuating Toepler, Tritium Production and Isolation Process.

Scott Jr. or Sr. A machine which delivers a horizontal thrust through a system of compressed air, pistons and a ram.

Scram An automatic shutdown of a reactor occurring when a safety system is activated by one or more equipment failures or measuring devices.

Segmented Fuel Element A slug composed of longitudinal segments, each segment being bonded to the Al webbing and tubing which incases it.

Sentinel Prototype of a remote area monitoring instrument.

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Sevac Process Particular method of vacuum canning resulting in ALSi brazed uranium.

Sigmion Radiation detection instrument (Ion current type).  
*Deliberate change in a reactor core is running smoothly.*

Smithfield Midget A small ion chamber survey meter so called because it was improvised from empty tins of Smithfield deviled ham.

Snout Facility Test hole 4c in KW reactor.

SORT Sonic orientation resonance tester.

Soup Bowl An instrument having a hemispherical detection chamber for measuring penetrating radiation.

Spider Aluminum support secured to a fuel element so that the fuel element can be used with a ribless process tube.

Spire Pulser An electrically driven pulser for an ALSi pot.

Spike Elements Zircaloy-clad Pu-Al alloy fuels.

SPR Supplementary production reactor.

Squaw A specially canned uranium slug to which the papoose is joined. The complete assembly is used to irradiate graphite.

Squawker-Blinker Rate meter.

SS Slug reject designation: Sleeve scratch. This classification includes any piece whose surface is marred in the course of removing the piece from the sleeve.

SS Slug reject designation: Stuck sleeve.

SSA 100 Program IBM program for accounting for nuclear materials in the 100 areas.

SSDB Solid State Diffusion Bonding.

STPM Single tube prototype mockup.

Striped Load Balanced charges of enriched uranium, poisoned with enriched target element.

STT Shielded Transfer Tank, from ORNL.

Surf Slug reject designation: Surface Rejects. Includes inclusions, stains and other surface defects.

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Sweater Protective metal coating or envelope deposited on a slug core.

\*SX Uranium slug of dimensions to fit Clinton Pile (ORNL).

\*T Metal Uranium.

TAI Trip-After-Instability.

TAS Toepler actuating system, Tritium Purification and Isolation Process.

\*Task I (234-5 Bldg.) Wet chemistry (EAH-6) (Equipment and Handling).

Task I-II Wet chemistry through fluorination.

\*Task II Dry chemistry (EAH-6).

\*Task III Reduction (EAH-6).

\*Task IV Casting (EAH-6) Now called foundry and not Task IV.

\*Task V Machining (EAH-6).

\*Task VI Coining (EAH-6).

\*Task VII Coating (EAH-6).

\*Task VIII Inspection and packing (EAH-6) Now known as Final inspection and packing.

TBI Trip-Before-Instability.

TC Bundles Bundles of thermocouple wires from the reactor tubes.

TCC Total control criterion.

T Cp Slug reject designation: Thin cap. Any piece in which the cap has been faced to less than specified thickness.

\*Tea Kettle Reaction vessel used in the analytical laboratories for the chemical assay for plutonium.

TF Lot A terminal lot of bare uranium pieces which have been accumulated at the 305 Test Reactor after acceptance sampling tests have been completed.

TFC Tube filling capacity of a fuel element.

TGM Thyac Geiger counter survey meter.

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TIG Tungsten inert gas welding process.

Tip-Off Cast aluminum device which is hung on the discharge face nozzles prior to tube discharges. Tip-off directs -- the discharged material to the storage basin.

TMI Total metallic impurity.

TOA Top of annulus.

TOE Time operated efficiency.

TORP Top of riser pressure.

Totem Pole See: TP.

TP A Beta, gamma survey meter with an extension probe.

TP Lots A terminal lot of M and/or Z pieces which have been accumulated at the 305 Test Reactor.

TPX Process TBP Plant with facilities capable of converting to Purex Process.

Trombone A sampling device approximately two feet in length and having a sliding action for drawing a sample into a 1 ml. pipet threaded on the end, used for extraction and first cycle solutions in the separation process.

Tru-Line Slugs Slugs having mating protrusions or recessions on the ends to assure proper alignment in the pile.

TTR Thermal Test Reactor.

\*Tuballoy Uranium.

TW Slug reject designation: Thin Wall.

\*TX Waste metal recovery designation. Uranium turnings for machining.

\*TXB Waste metal recovery designation. Uranium briquettes made from TX metal.

\*TXBE Waste metal recovery designation. Pickled briquettes made from TX metal.

TWFM Travelling Wire Flux Monitoring.

UFZ Unit flattened zone.

\*UM Waste metal recovery designation. Uranium rod ends from machining.

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Uniskanning A process for making large reductions per pass in metals by passing the work between a rigid backing surface and high pressure rolls or non-galling radiused surfaces.

UR Uranium recovery farm.

US Slug reject designation: Ultrasonic reject on the basis of transformation tests.

UT-1, to UT-6 Ultrasonic testers designed and built at Hanford for determining grain size, transformation, integrity and bonding.

V Slug reject designation: Closure radiograph of a void.

Vac - Sniff Qualitative measuring instrument used to detect active gases.

Vacuum Can Measuring instrument for beta and gamma radiation.

VGM Victoreen Geiger counter survey meter.

VSR Vertical safety rod.

\*W (1) Uranium source designation. Virgin metal from Westinghouse.  
(2) Site location for Hanford.

\*W Slug (1) Uranium slug manufactured at Hanford Works.  
(2) A natural uranium slug classified as free of defects on the basis of Zyglo and pickle inspection.

Walkie-Poppy Rate meter.

Walkie-Talkie Rate meter.

Warning Slug A solid uranium core inserted into a uranium sleeve and bonded to it and to an aluminum jacket by the single-dip AlSi canning process. Also called Double-Jacketed Slug.

\*Water Probe Counter Portable Geiger-Mueller counter used to measure the activity of water in the retention ponds.

WBC Whole body counter.

WC Slug reject designation: Wrinkled can. Any piece on which the exterior surface of the can wall exhibits a depression or elevation of varied size and depth.

Weasel An ion chamber for measuring comparative gamma activity of fuel elements under water at various distances.

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Weasel A mechanical device for logging the curvature of a process tube.

WGR Water-cooled, graphite-moderated reactor.

\*Whiz-Bang Piece of compressed air equipment used until February, 1945 in canning slugs.

Window Effect The phenomenon of hotter water in tubes allowing "hotter" neutrons to pass more freely between the metal and the graphite and vice versa.

Witch Hazel Gallium.

Woodsplitter Induction heating device used in simulating pile thermal conditions in testing individual slug cores.

WR Slug reject designation: Welding rejects. Includes pits in weld, oxide, weld penetrations, weld overhang and dimples.

WR Vault Waste recovery vault in TBP process.

Wrap-Around Slug U-235 or U-235-Al alloy pipe, clad with aluminum and inserted into a process tube. A solid cylinder of lithium-aluminum alloy clad with aluminum is inserted into this pipe. The uranium pipe thus has a cooling annulus on each side of it.

X-22 Measuring instrument used for checking gamma radiation in suspected locations for periods of thirty minutes to four hours.

\*X Metal Uranium.

\*X Slug (1) Recovered uranium slug with lower weight than Z-Slug.  
(2) A natural uranium slug accepted for pile use on the basis of Zyglo and pickle inspection but not entirely free of metal quality defects.

\*XC Uranium source designation. Cast rods from Iowa State College.

\*XCR Uranium source designation. Special test material from Iowa State College made by melting and letting metal solidify in the same vessel.

\*XD Uranium source designation. Rolled metal from duPont.

\*XK Uranium source designation. Rolled metal from Mallinckrodt Chemical Works.

XLMP Experimental loop model in H Reactor.

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\*XRU Uranium source designation. Rolled metal from Electro-Met.

\*Z Metal (1) Lithium.  
(2) Thorium in early reports.

\*Z Slug Designation for any recovered uranium slug.

Zeus Radiation detection instrument (Ion current type).

Zircaloy-2 Tin-Zirconium alloy.

Zircaloy-3 Iron-Tin-Zirconium alloy.

Zircaloy-4 Chromium-Iron-Tin-Zirconium alloy with 70 ppm Ni.

& Indicates slug has gone through autoclave test.

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