```
(*Nuclear Species Experimental Data*)
isotopeName = "Np-237";
databaseName = "JENDL-5";

atomicNumber = 93;(*Atomic number*)
neutronNumber = 238 - atomicNumber;
(*Compound nucleus neutron number*)(*Calculation Data Range*)

energyPattern = 3;(*Input required*)(*energyPattern=1;
Data at 0.0253eV*)(*energyPattern=2;
Data at 0.0253eV,500keV*)(*energyPattern=3;
Data at 0.0253eV,500keV,14MeV*)(*energyPattern=4;
Data at 500keV*)(*Incident Neutron Kinetic Energy*)

promptNeutrons1 = 2.683;(*0.0253 eV*)
promptNeutrons2 = 2.788;(*500 keV*)
promptNeutrons3 = 4.401;(*14 MeV*)

(*Neutron Separation Energy*)
neutronSeparationEnergy = 5488.3 / 1000;

(*Charge Distribution Experimental Data JENDL-5*)
yieldData0253eV = {{23, 0}, {24, 1.2366184 * 10^(-14)},
   {25, 7.5660990 * 10^(-12)}, {26, 7.1694639 * 10^(-10)},
   {27, 1.4679867 * 10^(-08)}, {28, 2.2108561 * 10^(-07)}, {29, 2.6201195 * 10^(-06)},
   {30, 3.4157452 * 10^(-05)}, {31, 2.8787503 * 10^(-04)}, {32, 1.6328759 * 10^(-03)},
   {33, 7.0670885 * 10^(-03)}, {34, 2.2541543 * 10^(-02)}, {35, 5.1407049 * 10^(-02)},
   {36, 7.9801254 * 10^(-02)}, {37, 1.1107101 * 10^(-01)}, {38, 1.3054844 * 10^(-01)},
   {39, 1.5082325 * 10^(-01)}, {40, 1.5094233 * 10^(-01)}, {41, 1.3387947 * 10^(-01)},
   {42, 8.7778448 * 10^(-02)}, {43, 6.5416018 * 10^(-02)}, {44, 5.4426687 * 10^(-03)},
   {45, 6.8314520 * 10^(-04)}, {46, 4.3927045 * 10^(-04)}, {47, 3.8074265 * 10^(-04)},
   {48, 3.6359696 * 10^(-04)}, {49, 3.3380037 * 10^(-03)}, {50, 3.5669718 * 10^(-02)},
   {51, 8.8553397 * 10^(-02)}, {52, 1.5352430 * 10^(-01)}, {53, 1.7325087 * 10^(-01)},
   {54, 1.5198723 * 10^(-01)}, {55, 1.4274942 * 10^(-01)}, {56, 1.1177843 * 10^(-01)},
   {57, 7.4127172 * 10^(-02)}, {58, 3.9671476 * 10^(-02)}, {59, 1.7617974 * 10^(-02)},
   {60, 5.4008932 * 10^(-03)}, {61, 1.4852543 * 10^(-03)}, {62, 2.8361638 * 10^(-04)},
   {63, 1.7705378 * 10^(-05)}, {64, 1.3369675 * 10^(-06)}, {65, 1.2400244 * 10^(-07)},
   {66, 8.0917851 * 10^(-09)}, {67, 2.2833522 * 10^(-10)}, {68, 6.3775592 * 10^(-12)},
   {69, 4.0918974 * 10^(-14)}, {70, 2.5176784 * 10^(-17)}, {71, 0}};

yieldData500keV = {{23, 2.4216600 * 10^(-18)}, {24, 4.6329620 * 10^(-14)},
   {25, 2.6124906 * 10^(-11)}, {26, 1.9091364 * 10^(-09)},
   {27, 3.5241915 * 10^(-08)}, {28, 9.6124824 * 10^(-07)}, {29, 8.1157375 * 10^(-06)},
   {30, 9.6312456 * 10^(-05)}, {31, 6.0775399 * 10^(-04)}, {32, 3.4875973 * 10^(-03)},
   {33, 1.0151961 * 10^(-02)}, {34, 2.3955642 * 10^(-02)}, {35, 4.2796761 * 10^(-02)},
   {36, 7.7991022 * 10^(-02)}, {37, 1.0835120 * 10^(-01)}, {38, 1.3270346 * 10^(-01)},
   {39, 1.4581256 * 10^(-01)}, {40, 1.6011641 * 10^(-01)}, {41, 1.3720023 * 10^(-01)},
   {42, 9.2656413 * 10^(-02)}, {43, 5.4987197 * 10^(-02)}, {44, 6.4181814 * 10^(-03)},
   {45, 1.2103986 * 10^(-03)}, {46, 1.1906223 * 10^(-03)}, {47, 1.1417268 * 10^(-03)},
   {48, 1.2791297 * 10^(-03)}, {49, 6.0166673 * 10^(-03)}, {50, 5.7793492 * 10^(-02)},
   {51, 8.8591080 * 10^(-02)}, {52, 1.4012149 * 10^(-01)}, {53, 1.5511815 * 10^(-01)},
   {54, 1.5456763 * 10^(-01)}, {55, 1.2864242 * 10^(-01)}, {56, 1.1126612 * 10^(-01)},
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    {57, 7.4779630 * 10^(-02)}, {58, 4.5392842 * 10^(-02)}, {59, 2.1804352 * 10^(-02)},
    {60, 9.6560090 * 10^(-03)}, {61, 3.2606576 * 10^(-03)}, {62, 7.3855271 * 10^(-04)},
    {63, 7.9090950 * 10^(-05)}, {64, 7.4685491 * 10^(-06)}, {65, 5.8955781 * 10^(-07)},
    {66, 5.2074012 * 10^(-08)}, {67, 6.3277668 * 10^(-09)}, {68, 1.7727420 * 10^(-09)},
    {69, 4.3389506 * 10^(-11)}, {70, 1.0278290 * 10^(-13)}, {71, 0}};

yieldData14MeV = {{23, 3.4439500 * 10^(-13)}, {24, 2.8185591 * 10^(-09)},
    {25, 8.5896215 * 10^(-07)}, {26, 2.6706401 * 10^(-05)}, {27, 1.3936495 * 10^(-04)},
    {28, 3.4544426 * 10^(-04)}, {29, 6.9151628 * 10^(-04)}, {30, 1.3246810 * 10^(-03)},
    {31, 2.6355114 * 10^(-03)}, {32, 4.9146896 * 10^(-03)}, {33, 9.4861986 * 10^(-03)},
    {34, 1.7787808 * 10^(-02)}, {35, 3.3635573 * 10^(-02)}, {36, 5.9417085 * 10^(-02)},
    {37, 9.6133546 * 10^(-02)}, {38, 1.2474173 * 10^(-01)}, {39, 1.3039585 * 10^(-01)},
    {40, 1.2432657 * 10^(-01)}, {41, 1.1158834 * 10^(-01)}, {42, 9.7661579 * 10^(-02)},
    {43, 7.3862400 * 10^(-02)}, {44, 4.1655867 * 10^(-02)}, {45, 3.2902950 * 10^(-02)},
    {46, 3.1985275 * 10^(-02)}, {47, 3.3950757 * 10^(-02)}, {48, 3.4272983 * 10^(-02)},
    {49, 4.4601947 * 10^(-02)}, {50, 7.7843310 * 10^(-02)}, {51, 9.5904561 * 10^(-02)},
    {52, 1.1725384 * 10^(-01)}, {53, 1.2834671 * 10^(-01)}, {54, 1.2879193 * 10^(-01)},
    {55, 1.2060814 * 10^(-01)}, {56, 9.4562884 * 10^(-02)}, {57, 5.9262049 * 10^(-02)},
    {58, 3.2871304 * 10^(-02)}, {59, 1.7248926 * 10^(-02)}, {60, 9.1856534 * 10^(-03)},
    {61, 4.7748754 * 10^(-03)}, {62, 2.4037663 * 10^(-03)}, {63, 1.2742244 * 10^(-03)},
    {64, 6.2781998 * 10^(-04)}, {65, 3.1117443 * 10^(-04)}, {66, 1.5479592 * 10^(-04)},
    {67, 6.9450098 * 10^(-05)}, {68, 1.8235334 * 10^(-05)}, {69, 1.0538466 * 10^(-06)},
    {70, 6.9283391 * 10^(-09)}, {71, 3.5603000 * 10^(-12)}};
```