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 MCDUFFIE, M. A. Carolina Power & Light Co.
 RECIP. NAME RECIPIENT AFFILIATION
 DETNON, H. R. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards responses to draft Chemical Engineering Branch
 SER open Items 146 & 147 re schematics of sample lines &
 panels (per TMI Item II.B.3) & post-accident sampling sys.

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List 1		List 2		List 3		List 4	
Name	Address	Name	Address	Name	Address	Name	Address
John Doe	123 Main St	John Doe	123 Main St	John Doe	123 Main St	John Doe	123 Main St
Jane Smith	456 Elm St	Jane Smith	456 Elm St	Jane Smith	456 Elm St	Jane Smith	456 Elm St
Bob Johnson	789 Oak St	Bob Johnson	789 Oak St	Bob Johnson	789 Oak St	Bob Johnson	789 Oak St
Alice Brown	101 Pine St	Alice Brown	101 Pine St	Alice Brown	101 Pine St	Alice Brown	101 Pine St
Charlie White	202 Cedar St	Charlie White	202 Cedar St	Charlie White	202 Cedar St	Charlie White	202 Cedar St
Diana Green	303 Birch St	Diana Green	303 Birch St	Diana Green	303 Birch St	Diana Green	303 Birch St
Frank Black	404 Spruce St	Frank Black	404 Spruce St	Frank Black	404 Spruce St	Frank Black	404 Spruce St
Grace Hall	505 Willow St	Grace Hall	505 Willow St	Grace Hall	505 Willow St	Grace Hall	505 Willow St
Henry King	606 Ash St	Henry King	606 Ash St	Henry King	606 Ash St	Henry King	606 Ash St
Ivy Lee	707 Hickory St	Ivy Lee	707 Hickory St	Ivy Lee	707 Hickory St	Ivy Lee	707 Hickory St
Jack Miller	808 Sycamore St	Jack Miller	808 Sycamore St	Jack Miller	808 Sycamore St	Jack Miller	808 Sycamore St
Karen Wilson	909 Magnolia St	Karen Wilson	909 Magnolia St	Karen Wilson	909 Magnolia St	Karen Wilson	909 Magnolia St
Leo Taylor	1010 Poplar St	Leo Taylor	1010 Poplar St	Leo Taylor	1010 Poplar St	Leo Taylor	1010 Poplar St
Mia Adams	1111 Walnut St	Mia Adams	1111 Walnut St	Mia Adams	1111 Walnut St	Mia Adams	1111 Walnut St
Noah Baker	1212 Chestnut St	Noah Baker	1212 Chestnut St	Noah Baker	1212 Chestnut St	Noah Baker	1212 Chestnut St
Olivia Clark	1313 Elm St	Olivia Clark	1313 Elm St	Olivia Clark	1313 Elm St	Olivia Clark	1313 Elm St
Peter Davis	1414 Oak St	Peter Davis	1414 Oak St	Peter Davis	1414 Oak St	Peter Davis	1414 Oak St
Quinn Evans	1515 Pine St	Quinn Evans	1515 Pine St	Quinn Evans	1515 Pine St	Quinn Evans	1515 Pine St
Rachel Foster	1616 Cedar St	Rachel Foster	1616 Cedar St	Rachel Foster	1616 Cedar St	Rachel Foster	1616 Cedar St
Samuel Green	1717 Birch St	Samuel Green	1717 Birch St	Samuel Green	1717 Birch St	Samuel Green	1717 Birch St
Tina Harris	1818 Spruce St	Tina Harris	1818 Spruce St	Tina Harris	1818 Spruce St	Tina Harris	1818 Spruce St
Uma Ives	1919 Willow St	Uma Ives	1919 Willow St	Uma Ives	1919 Willow St	Uma Ives	1919 Willow St
Victor Jones	2020 Ash St	Victor Jones	2020 Ash St	Victor Jones	2020 Ash St	Victor Jones	2020 Ash St
Wendy King	2121 Hickory St	Wendy King	2121 Hickory St	Wendy King	2121 Hickory St	Wendy King	2121 Hickory St
Xavier Lee	2222 Sycamore St	Xavier Lee	2222 Sycamore St	Xavier Lee	2222 Sycamore St	Xavier Lee	2222 Sycamore St
Yara Miller	2323 Magnolia St	Yara Miller	2323 Magnolia St	Yara Miller	2323 Magnolia St	Yara Miller	2323 Magnolia St
Zoe Taylor	2424 Poplar St	Zoe Taylor	2424 Poplar St	Zoe Taylor	2424 Poplar St	Zoe Taylor	2424 Poplar St
Adam White	2525 Walnut St	Adam White	2525 Walnut St	Adam White	2525 Walnut St	Adam White	2525 Walnut St
Bella Black	2626 Chestnut St	Bella Black	2626 Chestnut St	Bella Black	2626 Chestnut St	Bella Black	2626 Chestnut St
Carl Brown	2727 Elm St	Carl Brown	2727 Elm St	Carl Brown	2727 Elm St	Carl Brown	2727 Elm St
Dora Clark	2828 Oak St	Dora Clark	2828 Oak St	Dora Clark	2828 Oak St	Dora Clark	2828 Oak St
Ethan Davis	2929 Pine St	Ethan Davis	2929 Pine St	Ethan Davis	2929 Pine St	Ethan Davis	2929 Pine St
Fiona Evans	3030 Cedar St	Fiona Evans	3030 Cedar St	Fiona Evans	3030 Cedar St	Fiona Evans	3030 Cedar St
George Foster	3131 Birch St	George Foster	3131 Birch St	George Foster	3131 Birch St	George Foster	3131 Birch St
Helen Green	3232 Spruce St	Helen Green	3232 Spruce St	Helen Green	3232 Spruce St	Helen Green	3232 Spruce St
Ian Harris	3333 Willow St	Ian Harris	3333 Willow St	Ian Harris	3333 Willow St	Ian Harris	3333 Willow St
Jane Ives	3434 Ash St	Jane Ives	3434 Ash St	Jane Ives	3434 Ash St	Jane Ives	3434 Ash St
Kyle King	3535 Hickory St	Kyle King	3535 Hickory St	Kyle King	3535 Hickory St	Kyle King	3535 Hickory St
Laura Lee	3636 Sycamore St	Laura Lee	3636 Sycamore St	Laura Lee	3636 Sycamore St	Laura Lee	3636 Sycamore St
Mark Miller	3737 Magnolia St	Mark Miller	3737 Magnolia St	Mark Miller	3737 Magnolia St	Mark Miller	3737 Magnolia St
Nora Taylor	3838 Poplar St	Nora Taylor	3838 Poplar St	Nora Taylor	3838 Poplar St	Nora Taylor	3838 Poplar St
Oscar White	3939 Walnut St	Oscar White	3939 Walnut St	Oscar White	3939 Walnut St	Oscar White	3939 Walnut St
Pamela Black	4040 Chestnut St	Pamela Black	4040 Chestnut St	Pamela Black	4040 Chestnut St	Pamela Black	4040 Chestnut St
Quinn Brown	4141 Elm St	Quinn Brown	4141 Elm St	Quinn Brown	4141 Elm St	Quinn Brown	4141 Elm St
Rachel Clark	4242 Oak St	Rachel Clark	4242 Oak St	Rachel Clark	4242 Oak St	Rachel Clark	4242 Oak St
Samuel Davis	4343 Pine St	Samuel Davis	4343 Pine St	Samuel Davis	4343 Pine St	Samuel Davis	4343 Pine St
Tina Evans	4444 Cedar St	Tina Evans	4444 Cedar St	Tina Evans	4444 Cedar St	Tina Evans	4444 Cedar St
Uma Foster	4545 Birch St	Uma Foster	4545 Birch St	Uma Foster	4545 Birch St	Uma Foster	4545 Birch St
Victor Green	4646 Spruce St	Victor Green	4646 Spruce St	Victor Green	4646 Spruce St	Victor Green	4646 Spruce St
Wendy Harris	4747 Willow St	Wendy Harris	4747 Willow St	Wendy Harris	4747 Willow St	Wendy Harris	4747 Willow St
Xavier Ives	4848 Ash St	Xavier Ives	4848 Ash St	Xavier Ives	4848 Ash St	Xavier Ives	4848 Ash St
Yara King	4949 Hickory St	Yara King	4949 Hickory St	Yara King	4949 Hickory St	Yara King	4949 Hickory St
Zoe Lee	5050 Sycamore St	Zoe Lee	5050 Sycamore St	Zoe Lee	5050 Sycamore St	Zoe Lee	5050 Sycamore St



Carolina Power & Light Company

JUN 30 1983

SERIAL: LAP-83-253

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
United States Nuclear Regulatory Commission
Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT
UNIT NOS. 1 AND 2
DOCKET NOS. 50-400 AND 50-401
DRAFT SAFETY EVALUATION REPORT RESPONSES
CHEMICAL ENGINEERING BRANCH

Dear Mr. Denton:

Carolina Power & Light Company (CP&L) hereby transmits one original and forty copies of responses to Shearon Harris Nuclear Power Plant Draft Safety Evaluation Report Open Items. These responses are for the Chemical Engineering Branch, and are CP&L Open Item Numbers 146 and 147.

We will be providing responses to other Open Items in the Draft Safety Evaluation Report shortly.

Yours very truly,

M. A. McDuffie
Senior Vice President
Engineering & Construction

JDK/ta (7125JDK)

cc: Mr. N. Prasad Kadambi (NRC)	Mr. Wells Eddleman
Mr. J. Wing (NRC)	Dr. Phyllis Lotchin
Mr. G. F. Maxwell (NRC-SHNPP)	Mr. John D. Runkle
Mr. J. P. O'Reilly (NRC-RII)	Dr. Richard D. Wilson
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DRAFT SER OPEN ITEM 146

Question:

Provide the schematic diagrams of the sample lines and sampling panels.

Response:

Design criteria and capabilities of the Post Accident Sampling System comply with the guidelines of Item II.B.3 in NUREG 0737 and SRP 9.3.2 and are discussed in FSAR Section 9.3.2.2.3. The attached Figures 9.3.2-1 and 9.3.2-3 conceptually illustrate the sample lines and sampling panels, respectively.

FSAR Section 9.3.2.2.3 will be revised to provide final design information in a future amendment.

(7125JDKta)

1 31 25 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040

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$$R \rightarrow R[x] \rightarrow R[x^2] \rightarrow R[x^3] \rightarrow \cdots$$

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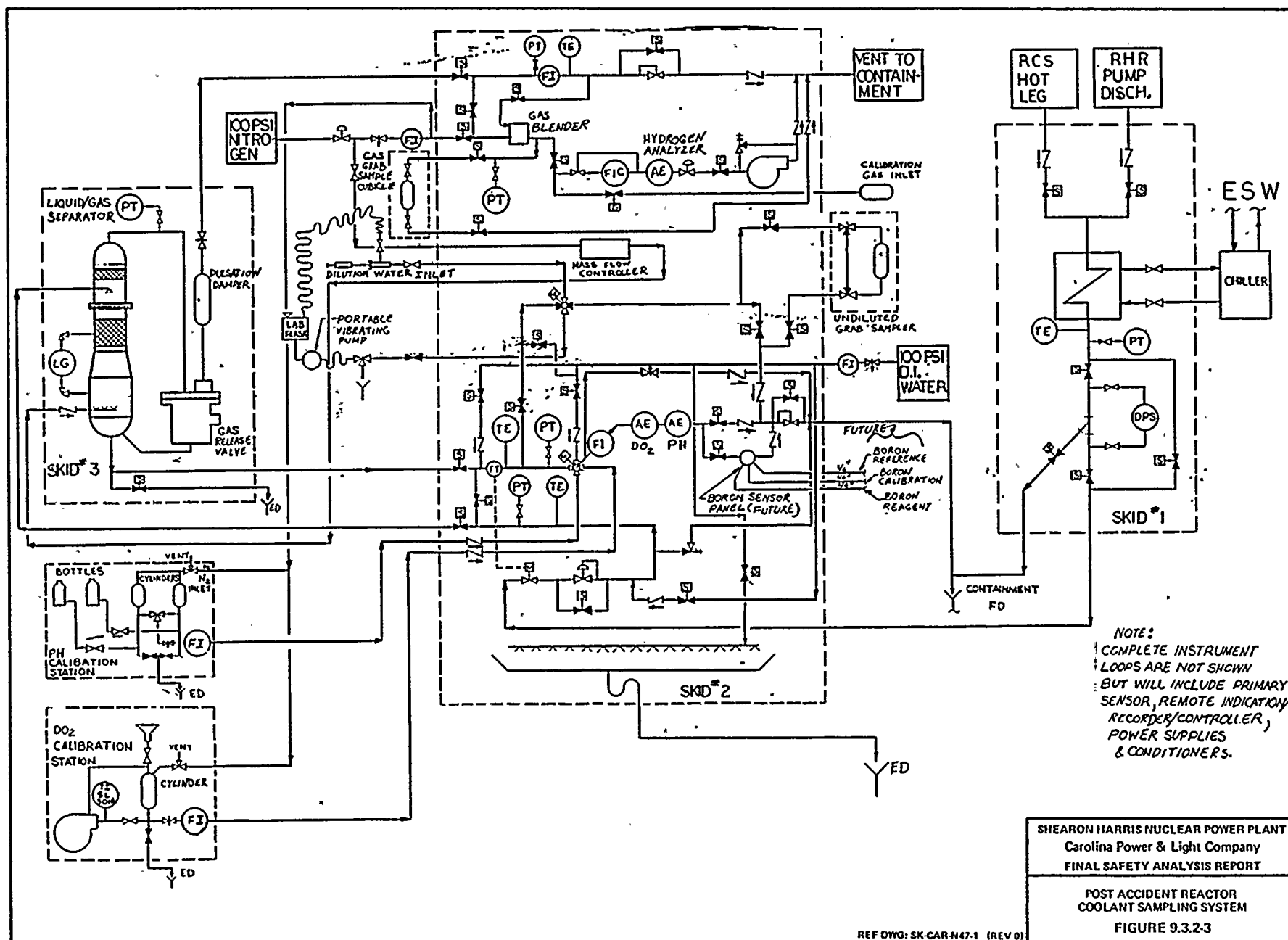
Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The *Agrobacterium* strains were grown in YEA medium for 24 h at 28 °C. The cell concentration was adjusted to 10⁸ cells/ml. The cells were then mixed with the plant tissue and the transformation efficiency was determined. The results are shown as the mean ± SD of three independent experiments. The transformation efficiency was significantly different from the control (p < 0.05) as determined by the Student's *t*-test.

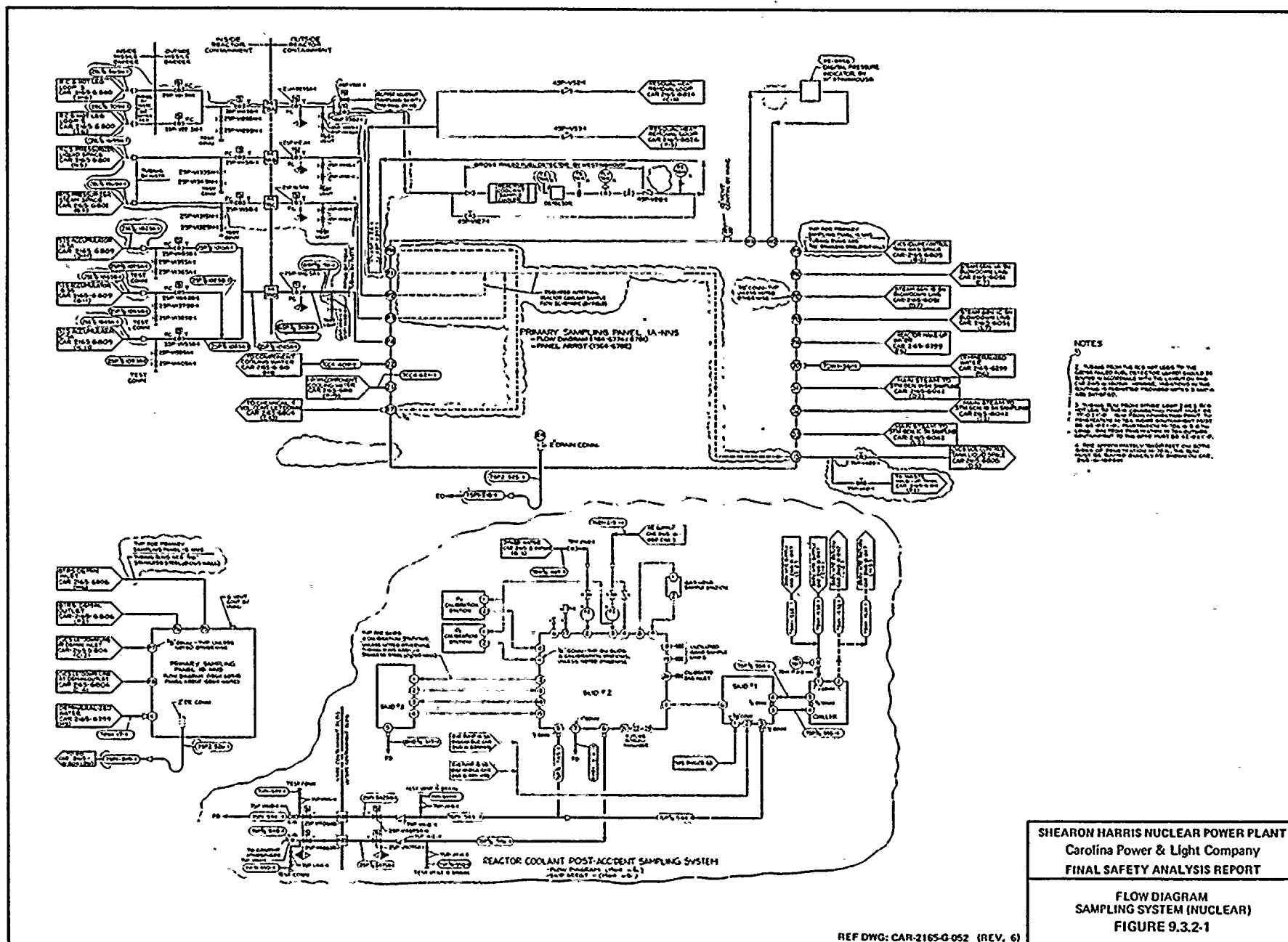
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SHEARON HARRIS NUCLEAR POWER PLANT
 Carolina Power & Light Company
 FINAL SAFETY ANALYSIS REPORT

FLOW DIAGRAM
 SAMPLING SYSTEM (NUCLEAR)
 FIGURE 9.3.2-1

REF DWG: CAR-2165-G-052 (REV. 6)

DRAFT SER OPEN ITEM 147

Question:

Provide information on testing frequency and type of testing to ensure long-term operability of the Post-Accident Sampling System.

Response:

Final testing details of the Post Accident Sampling System (PASS) are not available at this time. The PASS will be maintained (calibrated, flushed, refilled, etc.) based upon the manufacturer's recommendations in the Operation and Maintenance Manual. FSAR Section 9.3.2.2.3 will be revised in a future amendment to provide final details of the testing program. Criteria outlined in NUREG-0737, Item II.B.3, will be considered when establishing a testing program.

(7125JDKta)

