N12. Plant Inspection Experience And The Equipment Needed

A review of the field of non-destructive in-service inspections in the Federal Republic of Germany during the 1970s shows that the basic problems connected with the examination of all nuclear power plant components have been solved satisfactorily. In this respect, what immediately springs to mind is the development of appropriate manipulators for remote-controlled examinations, the development of examination techniques for detecting defects in clad and ferritic materials, as well as the evolution of computer-aided examinations equipment for the display and documentation of examination results. If a forecast for the next few years were to be made concerning the most crucial points in the aforementioned field in the Federal Republic of Germany, then several items would come to the fore: (1) Experience with the execution of in-service inspections gained hitherto will result in the fact that the newly manufactured nuclear power plant components will no longer contain any 'built-in' problems; (2) for commissioned nuclear power plants whose components do not meet the specific requirements of in-service inspections established over a period of time, further development of existing equipment or that currently undergoing trial will be carried out in order to enlarge the scope of applications and to improve the performance as well as the quality of the results; (3) development of additional equipment which allows parallel work to be carried out on different components in order to shorten the refueling time of nuclear power plants, e.g., remote setting of reactor pressure vessel nozzle plugs. Moreover, greater effort will be needed to make the achieved standard more 'attractive' to the utility by continuously improving techniques. One key point is a reduction in examination time together with decrease in the number of personnel and the level of radiation exposure.

For more, see Figlhuber, D., Brettschuh, W. and Kison, H., "Plant Inspection Experience and the Equipment Needed," IAEA-SM-274/17, pp. 286-98, 1989.