subsidies to promote the post-research manufacture, within the United States, of products resulting from technologies developed with government assistance.[46]

One primary issue for Canada is the fact that the NCRPA discriminates against the operations of Canadian companies located in the U.S.. Moreover, the manufacturing obligations resulting from this legislation also limit the potential benefits to Canada of participation in U.S. government-funded or contract R&D. An additional difference between the NCRPA and its predecessor is that the U.S. now applies the principle of reciprocity rather than the principle of national treatment. In addition, the legislation seeks to protect U.S. firms further from punitive treble damages in a private anti-trust suit, thereby discriminating further against Canadian companies in terms of U.S. anti-trust law (this issue is discussed in greater detail in Section 5).

- **The U.S. Technology Transfer Act and CRADAs**

Technology transfer requirements are one of the most frequently reported trade-related investment measures practised. The U.S. National Competitiveness Technology Transfer Act, for example, gives U.S. Federal laboratories the right to enter into cooperative agreements with firms and consortia of firms for R&D, but with preference given to American firms when establishing such agreements.[47] As a result, subsidies can be provided to national firms and not to foreign-controlled affiliates based in the U.S..

One relevant programme resulting from the U.S. Federal Technology Transfer Act are Cooperative Research and Development Agreements (CRADAs), which are

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46 *National Cooperative Production Amendments of 1993* P.L. 103-42 H.R. 1313/S. 574 15 U.S.C.s 4306. See also, *American Technology Preeminence Act* P.L. 102-245, including the *Technology Administration Authorization Act of 1991* H.R. 1989/S. 1034; 42 U.S.C. s 13525.

47 CRADAs were first authorized by the Stevenson-Wydler Technology Innovation Act of 1980, P.L.96-480, 94 Stat. 2311, updated by the National Competitiveness Technology Transfer Act of 1989, P.L. 101-189, 103 Stat. 1674 at Section 3133.

Article XXIII of the Department of Energy's Master Cooperative Research and Development Agreement which applies to PNGV projects involving DOE's National Labs requires, *inter alia*, that :
- Participants' (USCAR's) member companies are domestic companies which have their research and development, design, administration and production facilities for motor vehicles, located predominately in the United States and Canada.
- A Participant agrees that its share of joint research projects under the CRADA will be conducted predominately in U.S.-based facilities during the term of the CRADA and, if the Participant continues the work, for a period of two years after the completion of the CRADA.
- The Participants and the Contractor direct the joint research projects in such a manner that, when viewed across the entire multi-year programme, they promote early and first utilization and/or commercialization of the products, processes, or services utilizing intellectual property arising from the programme in U.S.-based facilities of the Participant's member companies and their suppliers. See 15 U.S.C. Section 3710 a(c)(4) (emphasis added).